

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Rob Rabago Examiner #: 75055 Date: 9/10/02
Art Unit: 1713 Phone Number 308-4347 Serial Number: 09/776,984
Mail Box and Bldg/Room Location: CP3 8B32 Results Format Preferred (circle): PAPER DISK E-MAIL
CP3 9A09

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched.
Include the elected species or structures; keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Catalyst compositions for the polymerization of olefins
Inventors (please provide full names): James Allen Ponasik, Jason Patrick McDevitt,
Christopher Moore Gillian, Peter Borden Mackenzie, Leslie Shaw Moody
Earliest Priority Filing Date: 3/13/97

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

The process of claim 1

BEST AVAILABLE COPY

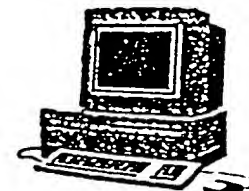
STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>K. Fuller</u>	NA Sequence (#) _____	STN <u>✓</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>6</u>	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: <u>9/13/02</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>20</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>55</u>	Other _____	Other (specify) _____

EIC1700

Search Results

Feedback Form (Optional)



Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the EIC searcher* who conducted the search *or contact*:

Kathleen Fuller, Team Leader, 308-4290, CP3/4 3D62

Voluntary Results Feedback Form

➤ *I am an examiner in Workgroup:* *Example:*

➤ *Relevant prior art found, search results used as follows:*

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ *Relevant prior art not found:*

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Search results were not useful in determining patentability or understanding the invention.

Other Comments:

Drop off completed forms in CP3/4 - 3D62 .

=> FILE REG

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DICTIONARY FILE UPDATES: 12 SEP 2002 HIGHEST RN 450335-18-9

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Calculated physical property data is now available. See HELP PROPERTIES
for more information. See STNote 27, Searching Properties in the CAS
Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

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FILE COVERS 1907 - 13 Sep 2002 VOL 137 ISS 12
FILE LAST UPDATED: 12 Sep 2002 (20020912/ED)

This file contains CAS Registry Numbers for easy and accurate
substance identification.

CAS roles have been modified effective December 16, 2001. Please
check your SDI profiles to see if they need to be revised. For
information on CAS roles, enter HELP ROLES at an arrow prompt or use
the CAS Roles thesaurus (/RL field) in this file.

=> D QUE L31

L5 STR
M5 N~~X~~C~~X~~G1~~X~~N
1 2 3 4

VAR G1=C/N

NODE ATTRIBUTES:

NSPEC	IS RC	AT	1
NSPEC	IS RC	AT	2
NSPEC	IS RC	AT	4

225,604 structures
from this
query

NSPEC IS RC AT 5
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 5

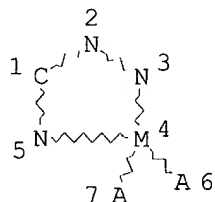
STEREO ATTRIBUTES: NONE

L7 SCR 1993

L8 SCR 1965

L10 225604 SEA FILE=REGISTRY SSS FUL L5 AND L7 AND L8

L21 STR



*5 subset searches with
3 more exact
structure query*

NODE ATTRIBUTES:

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CONNECT IS M3 R AT 3

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

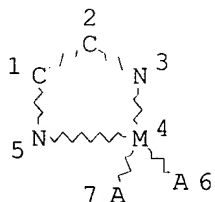
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NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE

L22 STR



NODE ATTRIBUTES:

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CONNECT IS M3 R AT 3

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

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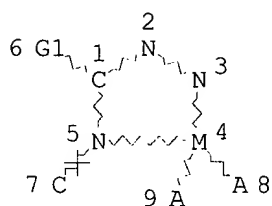
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE

L23 STR

next page



VAR G1=CB/AK

NODE ATTRIBUTES:

NSPEC IS RC AT 7

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE

L25 22626 SEA FILE=REGISTRY SUB=L10 SSS FUL (L21 OR L22 OR L23)

L27 8931 SEA FILE=HCAPLUS ABB=ON L25

L29 392 SEA FILE=HCAPLUS ABB=ON L27(L) LIGAND#

L30 44405 SEA FILE=HCAPLUS ABB=ON POLYMERI?(4A) (ETHYLENE OR PROPYLENE
OR BUTYLENE OR OLEFIN#)

L31 17 SEA FILE=HCAPLUS ABB=ON L29 AND L30

=> D L31 ALL 1-17 HITSTR

L31 ANSWER 1 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 2001:609863 HCAPLUS

DN 135:181095

TI Manufacture of supported **olefin polymerization**

catalysts containing transition metal-nitrogen tridentate ligand complex

IN Payne, Mark John

PA BP Chemicals Ltd., UK

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08F004-70

ICS C08F010-00

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 67

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001226424	A2	20010821	JP 2001-34799	20010213
	EP 1125952	A1	20010822	EP 2001-300584	20010123
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 2001044374	A1	20011122	US 2001-772880	20010131
PRAI	GB 2000-3356	A	20000214		
OS	MARPAT 135:181095				
AB	The catalysts, which are cheap and have uniform activity, are prepd. by steps of: (1) contacting a support contg. 1-10% water, e.g., silica, alumina, aluminosilicate or crosslinked polystyrene or poly(vinyl alc.), with trialkylaluminum compd., and (2) contacting the product from step 1				

22,626 structures
from subset
search

with a transition metal-nitrogen tridentate ligand complex. Thus, reacting 2.0 g 2,6-diacetylpyridinebis(2,4,6-trimethylanil) with 0.638 g iron dichloride in n-butanol at 80.degree. for 60 min and at room temp. for 16 h gave 2.56 g 2,6-diacetylpyridinebis(2,4,6-trimethylanil)iron dichloride, 0.0262 g of which (in dried MePh) was mixed with silica/MAO slurry prepd. in situ from 2 g ES 70X silica and 0.00494 mol trimethylaluminum to give a title catalyst with 0.12% Fe and 12.5% MAO, which was used for **ethylene** slurry **polymn.** with addnl. 3 mL 1 M triisobutylaluminum to give polyethylene with catalyst activity 5778 g/mmol-Fe/h.cntdot.Bar.

- ST ~~supported transition metal nitrogen tridentate ligand complex manuf; iron complex~~ **olefin ethylene polymn** catalyst manuf
- IT Polymerization catalysts
(coordination; manuf. of supported **olefin polymn.** catalysts contg. transition metal-nitrogen tridentate ligand complex)
- IT Transition metal complexes
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(nitrogen heterocyclic; manuf. of supported **olefin polymn.** catalysts contg. transition metal-nitrogen tridentate ligand complex)
- IT Heterocyclic compounds
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(nitrogen, transition metal complexes; manuf. of supported **olefin polymn.** catalysts contg. transition metal-nitrogen tridentate ligand complex)
- IT Polymerization catalysts
(supported; manuf. of supported **olefin polymn.** catalysts contg. transition metal-nitrogen tridentate ligand complex)
- IT 7631-86-9, ES 70X, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(ES 70X, catalyst support; in manuf. of supported **olefin polymn.** catalysts contg. iron-nitrogen tridentate ligand complex)
- IT 210155-39-8P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(catalyst intermediate; in manuf. of supported **olefin polymn.** catalysts contg. iron-nitrogen tridentate ligand complex)
- IT 100-99-2, Triisobutylaluminum, uses
RL: CAT (Catalyst use); USES (Uses)
(cocatalyst; manuf. of supported **olefin polymn.** catalysts contg. iron-nitrogen tridentate ligand complex)
- IT 308359-84-4P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(manuf. of supported **olefin polymn.** catalysts contg. iron-nitrogen tridentate ligand complex)
- IT 9002-88-4P, Polyethylene
RL: IMF (Industrial manufacture); PREP (Preparation)
(manuf. of supported **olefin polymn.** catalysts contg. iron-nitrogen tridentate ligand complex)
- IT 207129-93-9 207129-95-1 207129-96-2
210537-35-2 210768-87-9 221391-06-6 221391-08-8**
* ***221391-12-4 221391-13-5 221391-15-7
261787-81-9 308359-85-5 308359-86-6
355118-93-3

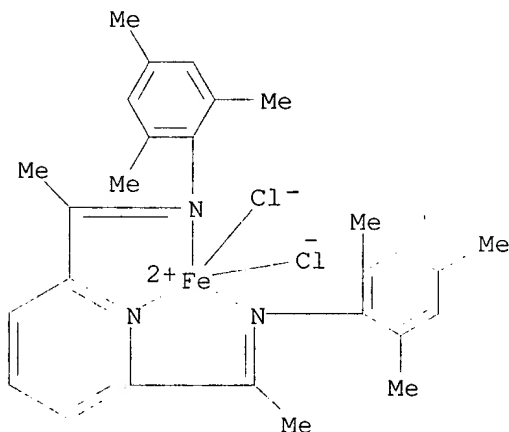
RL: CAT (Catalyst use); USES (Uses)
 (manuf. of supported **olefin polymn.** catalysts
 contg. transition metal-nitrogen tridentate **ligand** complex)

IT 88-05-1, 2,4,6-Trimethylaniline 1129-30-2, 2,6-Diacetylpyridine
 7758-94-3, Iron dichloride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactant for catalyst; in manuf. of supported **olefin**
polymn. catalysts contg. iron-nitrogen tridentate ligand
 complex)

IT 75-24-1, Trimethylaluminum 97-93-8, Triethylaluminum, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactant for cocatalyst; in manuf. of supported **olefin**
polymn. catalysts contg. iron-nitrogen tridentate ligand
 complex)

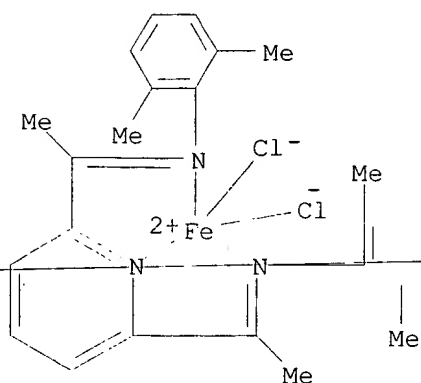
IT 308359-84-4P
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);
 USES (Uses)
 (manuf. of supported **olefin polymn.** catalysts
 contg. iron-nitrogen tridentate **ligand** complex)

RN 308359-84-4 HCAPLUS
 CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,4,6-
 trimethylbenzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



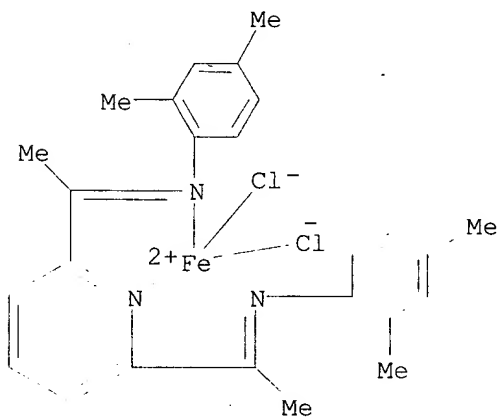
IT 207129-93-9 207129-95-1 207129-96-2
 210537-35-2 210768-87-9 221391-08-8
 221391-12-4 221391-13-5 221391-15-7
 261787-81-9 308359-85-5 308359-86-6
 355118-93-3
 RL: CAT (Catalyst use); USES (Uses)
 (manuf. of supported **olefin polymn.** catalysts
 contg. transition metal-nitrogen tridentate **ligand** complex)

RN 207129-93-9 HCAPLUS
 CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-
 dimethylbenzenamine-.kappa.N]]-, (SP-5-13)- (9CI) (CA INDEX NAME)



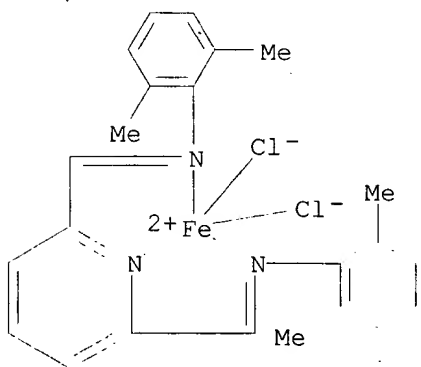
RN 207129-95-1 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-κN)diethylidyne]bis[2,4-dimethylbenzenamine-κN]]- (9CI) (CA INDEX NAME)



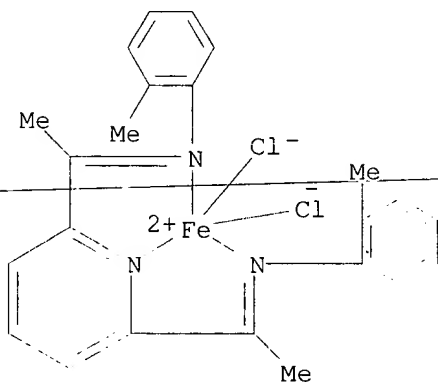
RN 207129-96-2 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-κN)dimethylidyne]bis[2,6-dimethylbenzenamine-κN]]- (9CI) (CA INDEX NAME)



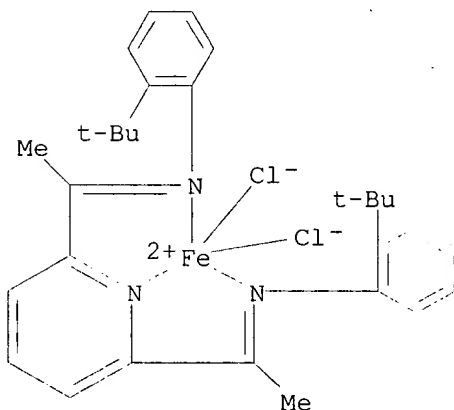
RN 210537-35-2 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)bis(ethylidynenitrilo-.kappa.N)]bis[2-methylbenzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



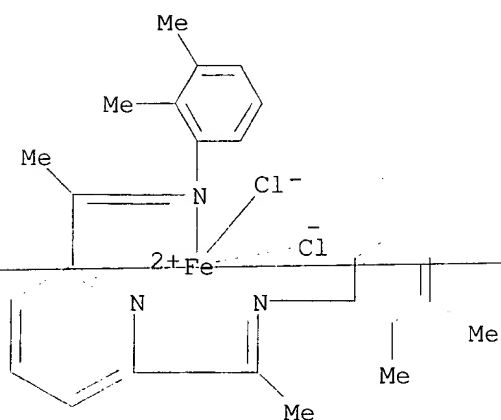
RN 210768-87-9 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2-(1,1-dimethylethyl)benzenamine-.kappa.N]]-, (SP-5-13)- (9CI) (CA INDEX NAME)

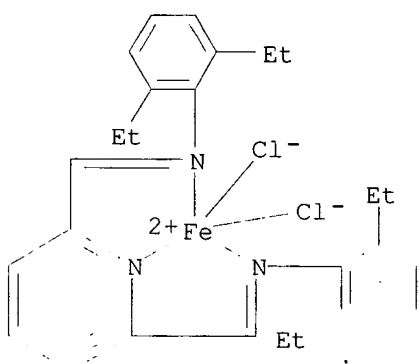


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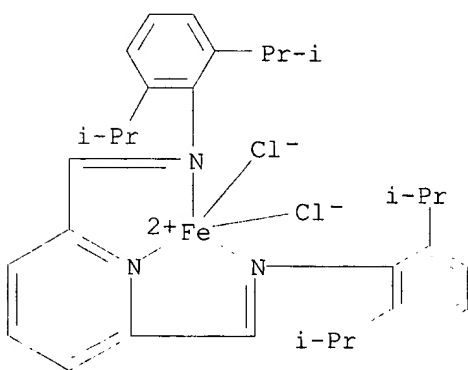
CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,3-dimethylbenzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



RN 221391-12-4 HCAPLUS
 CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)dimethylidyne]bis[2,6-diethylbenzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)

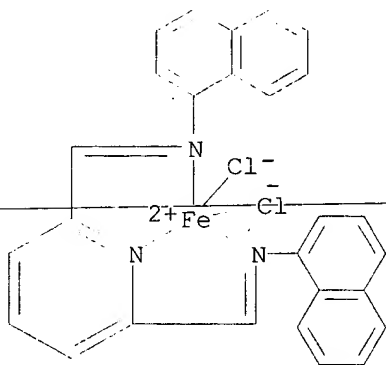


RN 221391-13-5 HCAPLUS
 CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)dimethylidyne]bis[2,6-bis(1-methylethyl)benzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



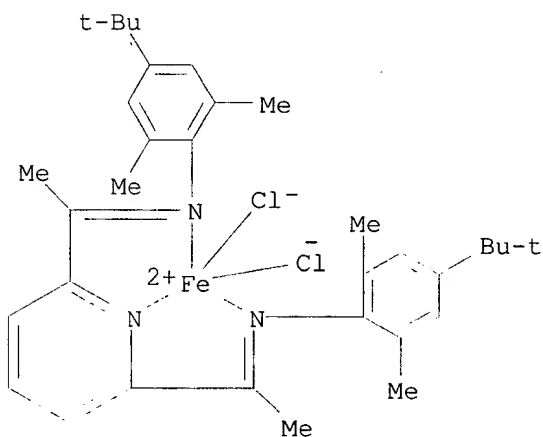
RN 221391-15-7 HCAPLUS
 CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)dimethylidyne]bis[1-

naphthalenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



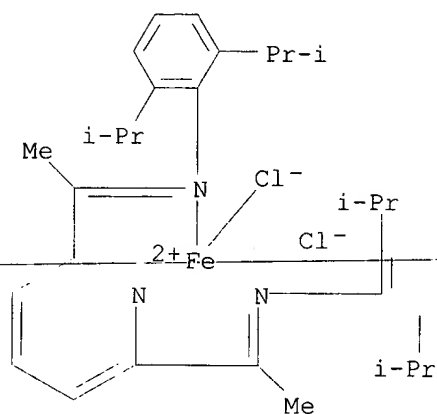
RN 261787-81-9 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[4-(1,1-dimethylethyl)-2,6-dimethylbenzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



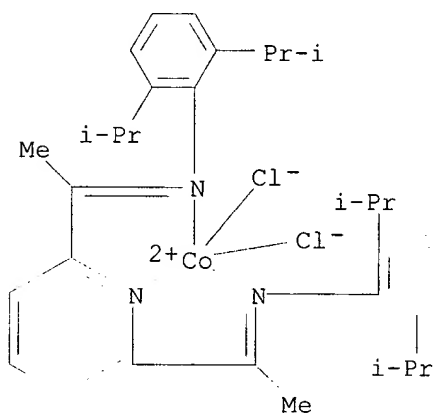
RN 308359-85-5 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-bis(1-methylethyl)benzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



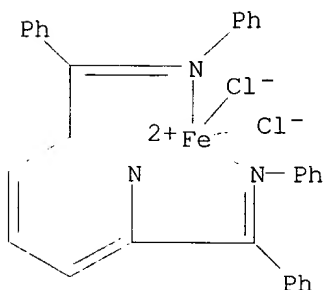
RN 308359-86-6 HCAPLUS

CN Cobalt, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-bis(1-methylethyl)benzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



RN 355118-93-3 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)bis(phenylmethyldiynyl)]bis[benzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



AN 2001:584639 HCAPLUS

DN 135:304175

TI **Polymerization of ethylene** catalyzed by iron complex bearing 2,6-bis(imine)pyridyl ligand: 1H and 2H NMR monitoring of ferrous species formed via catalyst activation with AlMe₃, MAO, AlMe₃/B(C₆F₅)₃ and AlMe₃/CPh₃B(C₆F₅)₄

AU Talsi, Evgenii P.; Babushkin, Dmitrii E.; Semikolenova, Nina V.; Zudin, Vladimir N.; Panchenko, Valentina N.; Zakharov, Vladimir A.

CS Boreskov Institute of Catalysis, Novosibirsk, 630090, Russia

SO Macromolecular Chemistry and Physics (2001), 202(10), 2046-2051

CODEN: MCHPES; ISSN: 1022-1352

PB Wiley-VCH Verlag GmbH

DT Journal

LA English

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 29, 67

AB 1H and 2H NMR spectroscopic monitoring of ferrous species formed via interaction of 2,6-bis[1-(2,6-dimethylphenylimino)ethyl]pyridineiron(II) chloride (1) with AlMe₃, MAO, AlMe₃/B(C₆F₅)₃ and AlMe₃/CPh₃B(C₆F₅)₄ is reported. At interaction of 1 with MAO in toluene soln., the new stable heterodinuclear neutral complexes with proposed structures LFe(II)(Cl)(.mu.-Me)2AlMe₂ and LFe(II)(Me)(.mu.-Me)2AlMe₂ are formed (L is initial tridentate ligand). Complex LFe(II)(Cl)(.mu.-Me)2AlMe₂ predominates at low Al/Fe ratios (less than 50), while LFe(II)(Me)(.mu.-Me)2AlMe₂ at high Al/Fe ratios (more than 500). Complex assigned to LFe(II)(Me)(.mu.-Me)2AlMe₂ can be prepd. via interaction of 1 with AlMe₃. Activation of LFe(II)(Me)(.mu.-Me)2AlMe₂ by B(C₆F₅)₃ and CPh₃B(C₆F₅)₄ gives rise to formation of new complexes with proposed structures [LFe(.mu.-Me)2AlMe₂]+[MeB(C₆F₅)₃]- and [LFe(.mu.-Me)2AlMe₂]+[B(C₆F₅)₄]-. Unexpectedly, the activity at **ethylene polymn.** was even higher for 1/AlMe₃ than for 1/MAO catalytic system. The co-catalytic activity of MAO towards 1 dramatically decreased with the diminishing of AlMe₃ content in the compn. of MAO. Activity of the catalyst 1/AlMe₃ and the mol. structure of polyethylene produced do not change noticeably at the addn. of B(C₆F₅)₃ to 1/AlMe₃. These data allow to suggest, that active species of 1/AlMe₃ and 1/MAO systems are neutral methylated ferrous complexes but not cationic intermediates. Probably, complex LFe(II)(Me)(.mu.-Me)2AlMe₂ is the closest precursor of these active species.

ST iron complex bisiminepyridyl ligand catalyst **ethylene polymn.**; aluminum cocatalyst iron complex polymn catalyst interaction; boron compd cocatalyst iron complex polymn catalyst interaction

IT Aluminoxanes

RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)

(Me, cocatalyst; **polymn. of ethylene** catalyzed by iron complex bearing 2,6-bis(imine)pyridyl ligand and 1H and 2H NMR monitoring of ferrous species formed via catalyst activation with AlMe₃, MAO, AlMe₃/B(C₆F₅)₃ and AlMe₃/CPh₃B(C₆F₅)₄)

IT **Polymerization** catalysts

(**polymn. of ethylene** catalyzed by iron complex bearing 2,6-bis(imine)pyridyl ligand and 1H and 2H NMR monitoring of ferrous species formed via catalyst activation with AlMe₃, MAO, AlMe₃/B(C₆F₅)₃ and AlMe₃/CPh₃B(C₆F₅)₄)

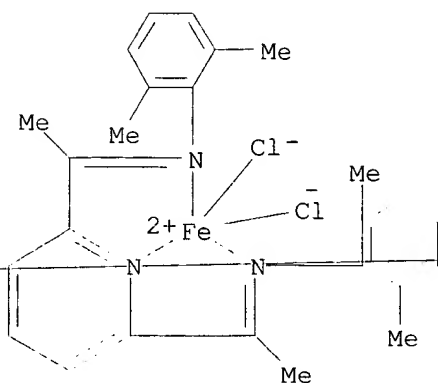
IT 75-24-1, Trimethylaluminum 1109-15-5, Perfluorotriphenylboron

136040-19-2, Triphenylmethyl tetrakis(pentafluorophenyl)borate

RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)

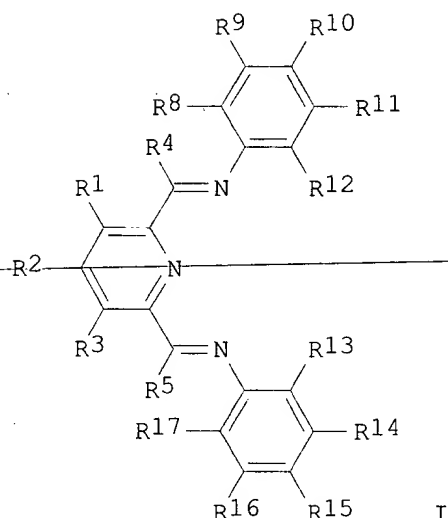
(cocatalyst; **polymn. of ethylene** catalyzed by iron

- complex bearing 2,6-bis(imine)pyridyl ligand and 1H and 2H NMR monitoring of ferrous species formed via catalyst activation with AlMe₃, MAO, AlMe₃/B(C₆F₅)₃ and AlMe₃/CPh₃B(C₆F₅)₄)
- IT 207129-93-9P
 RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (polymn. of **ethylene** catalyzed by iron complex bearing 2,6-bis(imine)pyridyl ligand and 1H and 2H NMR monitoring of ferrous species formed via catalyst activation with AlMe₃, MAO, AlMe₃/B(C₆F₅)₃ and AlMe₃/CPh₃B(C₆F₅)₄)
- IT 350679-35-5P 350679-36-6P 350679-39-9P 350679-40-2P
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (polymn. of **ethylene** catalyzed by iron complex bearing 2,6-bis(imine)pyridyl ligand and 1H and 2H NMR monitoring of ferrous species formed via catalyst activation with AlMe₃, MAO, AlMe₃/B(C₆F₅)₃ and AlMe₃/CPh₃B(C₆F₅)₄)
- IT 87-62-7, 2,6-Dimethylaniline 1129-30-2, 2,6-Diacetylpyridine 7758-94-3, Ferrous chloride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (polymn. of **ethylene** catalyzed by iron complex bearing 2,6-bis(imine)pyridyl ligand and 1H and 2H NMR monitoring of ferrous species formed via catalyst activation with AlMe₃, MAO, AlMe₃/B(C₆F₅)₃ and AlMe₃/CPh₃B(C₆F₅)₄)
- IT 204203-16-7P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (polymn. of **ethylene** catalyzed by iron complex bearing 2,6-bis(imine)pyridyl ligand and 1H and 2H NMR monitoring of ferrous species formed via catalyst activation with AlMe₃, MAO, AlMe₃/B(C₆F₅)₃ and AlMe₃/CPh₃B(C₆F₅)₄)
- IT 9002-88-4P, Polyethylene
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (polymn. of **ethylene** catalyzed by iron complex bearing 2,6-bis(imine)pyridyl ligand and 1H and 2H NMR monitoring of ferrous species formed via catalyst activation with AlMe₃, MAO, AlMe₃/B(C₆F₅)₃ and AlMe₃/CPh₃B(C₆F₅)₄)
- RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
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 (2) Brintzinger, H; Angew Chem, Int Ed Engl 1995, V34, P1143 HCAPLUS
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 (6) Hill, D; J Am Chem Soc 1988, V110, P1651
 (7) Small, B; J Am Chem Soc 1998, V120, P4049 HCAPLUS
 (8) Yang, X; J Am Chem Soc 1991, V113, P3623 HCAPLUS
- IT 207129-93-9P
 RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (polymn. of **ethylene** catalyzed by iron complex bearing 2,6-bis(imine)pyridyl ligand and 1H and 2H NMR monitoring of ferrous species formed via catalyst activation with AlMe₃, MAO, AlMe₃/B(C₆F₅)₃ and AlMe₃/CPh₃B(C₆F₅)₄)
- RN 207129-93-9 HCAPLUS
- CN Iron, dichloro[N,N'-(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-dimethylbenzenamine-.kappa.N]]-, (SP-5-13)-(9CI) (CA INDEX NAME)



L31 ANSWER 3 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 2001:302382 HCAPLUS
 DN 134:326893
 TI Tridentate ligands based on bis(iminomethyl)pyridine derivatives
 IN Bennett, Alison
 PA USA
 SO U.S. Pat. Appl. Publ., 17 pp., Cont. -in-part of U. S. Ser. No. 273,409.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM C07D211-70
 ICS C08F220-10
 NCL 526329000
 CC 35-3 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 67
 FAN.CNT 7

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2001000519	A1	20010426	US 2000-729305	20001204
	US 6423848	B2	20020723		
	US 5955555	A	19990921	US 1997-991372	19971216
	EP 1127897	A2	20010829	EP 2001-200886	19971216
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
	US 6214761	B1	20010410	US 1999-273409	19990322
PRAI	US 1996-33656P	P	19961217		
	US 1997-991372	A2	19971216		
	US 1999-273409	A2	19990322		
	EP 1997-953340	A3	19971216		
OS	MARPAT 134:326893				
GI					



AB Title derivs. I [R1-3, R9-16 = H, (substituted) hydrocarbyl, or inert functional group; R4, R5 = H or (substituted) hydrocarbyl, R8, R12, R13, R17 = (substituted) hydrocarbyl or inert functional group, any 2 of R8-17 that are vicinal to one another taken together may form a ring] are useful for as Co or Fe complexes for catalysts in **polymn.** of **olefins.**

ST bisiminomethylpyridine deriv cobalt complex catalyst **polymn olefin**; iron bisiminomethylpyridine deriv complex catalyst **polymn olefin**

IT Aluminoxanes

RL: CAT (Catalyst use); USES (Uses)

(Me, cocatalyst; tridentate ligands based on bis(iminomethyl)pyridine derivs. for cobalt or iron complexes for catalysts for **polymn.** of **olefins**)

IT Polymerization catalysts

(tridentate ligands based on bis(iminomethyl)pyridine derivs. for cobalt or iron complexes for catalysts for **polymn.** of **olefins**)

IT 1271-19-8, Titanocene dichloride 54039-38-2 75171-00-5 75180-85-7
85959-83-7 112243-79-5 119821-97-5 130638-44-7 132510-07-7
135072-61-6 135539-49-0 148799-37-5 148799-45-5 149342-08-5
156367-60-1 191155-99-4 245360-94-5 245361-10-8 245361-12-0
245361-15-3 245361-17-5

RL: CAT (Catalyst use); USES (Uses)

(catalyst; tridentate ligands based on bis(iminomethyl)pyridine derivs. for cobalt or iron complexes for catalysts for **polymn.** of **olefins**)

IT 210537-35-2 308359-84-4 308359-85-5
308359-86-6

RL: CAT (Catalyst use); USES (Uses)

(tridentate **ligands** based on bis(iminomethyl)pyridine derivs. for cobalt or iron complexes for catalysts for **polymn.** of **olefins**)

IT 9002-88-4P, Polyethylene 9003-07-0P, Polypropylene

RL: IMF (Industrial manufacture); PREP (Preparation)

(tridentate ligands based on bis(iminomethyl)pyridine derivs. ~~for~~ cobalt or iron complexes for catalysts for **polymn.** of

olefins)
IT 204203-14-5 210155-39-8 210155-40-1 210155-55-8 335657-86-8
RL: MSC (Miscellaneous)

(tridentate ligands based on bis(iminomethyl)pyridine derivs. for cobalt or iron complexes for catalysts for polymn. of

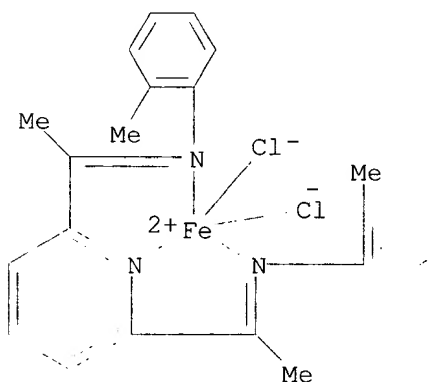
olefins)
IT 210537-35-2 308359-84-4 308359-85-5
308359-86-6

RL: CAT (Catalyst use); USES (Uses)
(tridentate ligands based on bis(iminomethyl)pyridine derivs.
for cobalt or iron complexes for catalysts for polymn. of

olefins)

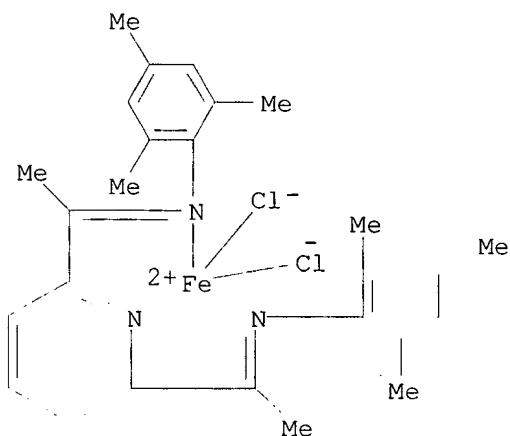
RN 210537-35-2 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)bis(ethylidynenitrilo-.kappa.N)]bis[2-methylbenzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



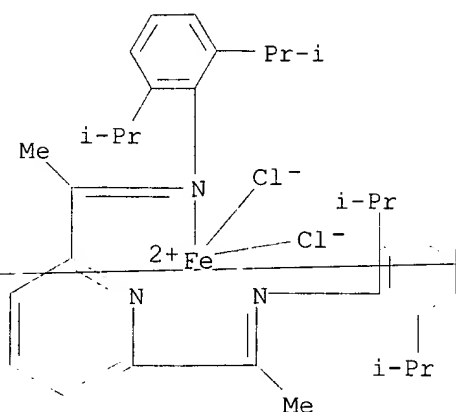
RN 308359-84-4 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,4,6-trimethylbenzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)

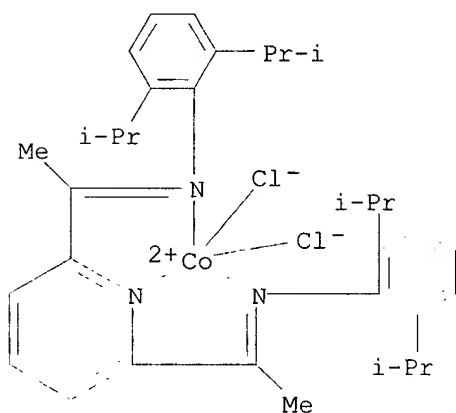


RN 308359-85-5 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-bis(1-methylethyl)benzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



RN 308359-86-6 HCAPLUS
 CN Cobalt, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidene]bis[2,6-bis(1-methylethyl)benzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



L31 ANSWER 4 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 2001:246353 HCAPLUS
 DN 135:77129
 TI FI Catalysts: super active new **ethylene polymerization** catalysts
 AU Matsui, S.; Fujita, T.
 CS Materials Science Laboratory, 530-32 Nagaura, Mitsui Chemicals, Inc., Chiba, Sodegaura-City, Japan
 SO Catalysis Today (2001), 66(1), 63-73
 CODEN: CATTEA; ISSN: 0920-5861
 PB Elsevier Science B.V.
 DT Journal
 LA English
 CC 35-3 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 78
 AB Based on "ligand-oriented catalyst design", group 4 transition metal complexes having two phenoxy-imine ligands, FI Catalysts, were synthesized and investigated as **olefin polymn.** catalysts using **ethylene** at atm. pressure. As a result, these complexes were

found to exhibit very high activity using MAO as a cocatalyst. Among them, zirconium complexes displayed the highest activity with moderate (Mv: 0.8.times.104) to very high (Mv: 71.6.times.104) mol. wt. ranges. The max. activity exceeded 4 t-PE/(mmol-cat^{superscript:h}) at 25.degree.C even at atm. pressure, the activity being two orders of magnitude larger than that exhibited by Cp2ZrCl2. Alternatively, by using borate/iBu3Al as a cocatalyst, a zirconium FI Catalyst produced exceptionally high mol. wt. polyethylene (Mv: 505.times.104) displaying considerable activity. As far as we know, this is one of the highest mol. wt. values obtained from homogeneous polymn. catalysts. These results indicate that FI Catalysts possess very high potential as ~~olefin-polymn.~~ catalysts.

ST group IV transition metal complex phenoxyimine ligand polymn catalyst;
ethylene polymn transition metal complex phenoxyimine
ligand catalyst

IT Aluminoxanes

RL: CAT (Catalyst use); USES (Uses)

(Me; group IV transition metal complexes having two phenoxy-imine
ligands as super active **ethylene polymn.** catalysts)

IT Polymerization catalysts

(group IV transition metal complexes having two phenoxy-imine ligands
as super active **ethylene polymn.** catalysts)

IT 100-99-2, Tris(isobutyl) aluminum, uses 136040-19-2, Triphenylcarbonium
tetrakis(pentafluorophenyl)borate 215050-65-0 215050-67-2
215051-00-6 215051-04-0 215051-12-0 215051-20-0 **215594-94-8**
261375-85-3 264626-79-1 279218-85-8 279218-86-9 **347850-82-2**
347850-83-3

RL: CAT (Catalyst use); USES (Uses)

(group IV transition metal complexes having two phenoxy-imine
ligands as super active **ethylene polymn.**
catalysts)

IT 9002-88-4P, Polyethylene

RL: SPN (Synthetic preparation); PREP (Preparation)

(group IV transition metal complexes having two phenoxy-imine ligands
as super active **ethylene polymn.** catalysts)

RE.CNT 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD

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 (51) Wang, C; Organometallics 1998, V17, P3149 HCAPLUS
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 (54) Ziegler, K; Angew Chem 1955, V67, P541 HCAPLUS

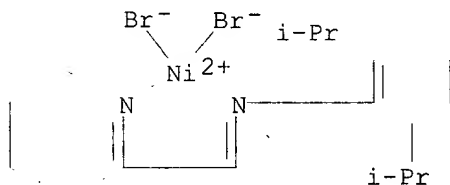
IT 215594-94-8 347850-82-2

RL: CAT (Catalyst use); USES (Uses)

(group IV transition metal complexes having two phenoxy-imine
 ligands as super active ethylene polymn.
 catalysts)

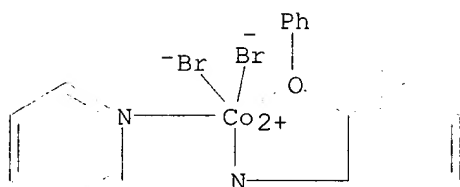
RN 215594-94-8 HCAPLUS

CN Nickel, [2,6-bis(1-methylethyl)-N-[(2-pyridinyl-
 .kappa.N)methylene]benzenamine-.kappa.N]dibromo- (9CI) (CA INDEX NAME)



RN 347850-82-2 HCAPLUS

CN Cobalt, dibromo[2-(phenoxy-.kappa.O)-N-[(2-pyridinyl-
 .kappa.N)methylene]benzenamine-.kappa.N]- (9CI) (CA INDEX NAME)



L31 ANSWER 5 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 2001:178430 HCAPLUS
 DN 134:208327
 TI Transition metal complexes of imino nitrogen-containing heterocycle
 ligands as catalysts for the **polymerization of olefins**
 IN Ponasik, James Allen, Jr.; Mcdevitt, Jason Patrick; Killian, Christopher
 Moore; MacKenzie, Peter Borden; Moody, Leslie Shane; Lavoie, Gino Georges
 PA Eastman Chemical Company, USA
 SO U.S., 27 pp., Cont.-in-part of U.S. Ser. No. 28,315 *applicante*
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM B01J023-38
 ICS B01J023-40; B01J023-74; B01J023-75; B01J023-755
 NCL 502162000
 CC 35-3 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 29

FAN.CNT 7

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6200925	B1	20010313	US 1998-222614	19981229
	US 2002035030	A1	20020321	US 2001-776984	20010205
	US 2001025007	A1	20010927	US 2001-780093	20010209
	US 6372682	B2	20020416		
PRAI	US 1997-40754P	P	19970313		
	US 1997-44691P	P	19970418		
	US 1997-45337P	P	19970501		
	US 1997-45357P	P	19970502		
	US 1997-45358P	P	19970502		
	US 1997-45697P	P	19970506		
	US 1998-28315	A2	19980224		
	US 1998-222614	A3	19981229		

OS MARPAT 134:208327

AB The title catalyst systems, useful in the **polymn.** of **olefins**, comprise a Group 8-10 transition metal component and a ligand component comprising a N and/or functional groups comprising a N, generally in the form of an imine functional group. In certain embodiments, the ligand component may further comprise a phosphorus atom. Preferred ligand components are bidentate (bind to the transition metal at two or more sites) and include a nitrogen-transition metal bond. The transition metal-ligand complex is generally cationic and assocd. with a weakly coordinating anion. The catalyst system may be supported or comprises a Lewis or Bronsted acid complexed with the ligand component of the transition metal-ligand complex, e.g. Me aluminoxane or B(C6F5)3.

ST nickel complex **olefin polymn** catalysts

IT Aluminoxanes

RL: CAT (Catalyst use); USES (Uses)

(Me; Transition metal complexes of imino or nitrogen-contg. heterocycle

- ligands as catalysts for the **polymn.** of olefins)
- IT Polyolefins
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (Transition metal complexes of imino or nitrogen-contg. heterocycle
 ligands as catalysts for the **polymn.** of olefins)
- IT Ligands
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (Transition metal complexes of imino or nitrogen-contg. heterocycle
 ligands as catalysts for the **polymn.** of olefins)
- IT Polymerization catalysts
 (coordination; Transition metal complexes of imino or nitrogen-contg.
 heterocycle ligands as catalysts for the **polymn.** of
 olefins)
- IT 1109-15-5, Tris(pentafluorophenyl)borane 121281-53-6 328565-01-1
 RL: CAT (Catalyst use); USES (Uses)
 (Transition metal complexes of imino or nitrogen-contg. heterocycle
 ligands as catalysts for the **polymn.** of
 olefins)
- IT 213384-29-3P 213384-31-7P 213384-33-9P
 213384-35-1P 213384-37-3P 213384-39-5P
 213384-41-9P 213384-43-1P 213384-45-3P
 213384-47-5P 213384-49-7P 213384-51-1P
 213384-53-3P 213384-55-5P 213384-57-7P
 328565-00-0P 328565-02-2P 328565-03-3P
 328565-04-4P 328565-05-5P 328565-06-6P
 328565-08-8P 328565-10-2P
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);
 USES (Uses)
 (Transition metal complexes of imino or nitrogen-contg. heterocycle
 ligands as catalysts for the **polymn.** of
 olefins)
- IT 1295-35-8
 RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES
 (Uses)
 (Transition metal complexes of imino or nitrogen-contg. heterocycle
 ligands as catalysts for the **polymn.** of olefins)
- IT 9002-88-4P, Polyethylene 25038-76-0P, Norbornene, homopolymer
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (Transition metal complexes of imino or nitrogen-contg. heterocycle
 ligands as catalysts for the **polymn.** of olefins)
- IT 121-44-8, Triethylamine, reactions 271-44-3, Indazole 273-34-7,
 1H-1,2,3-Triazolo[4,5-b]pyridine 288-13-1, Pyrazole 288-36-8,
 1,2,3-Triazole 288-88-0, 1H-1,2,4-Triazole 463-71-8, Thiophosgene
 1453-58-3 1989-53-3, 2,6-Dimethoxybenzoyl chloride 5401-94-5,
 5-Nitroindazole 7550-45-0, Titanium tetrachloride, reactions
 14190-59-1, 2-Thiazolecarboxylic acid 18039-42-4, 5-Phenyl-1H-tetrazole
 23814-12-2, 1H-Benzotriazole-5-carboxylic acid 24295-03-2,
 2-Acetylthiazole 24544-04-5 28923-39-9 59387-01-8 64594-47-4
 157894-08-1 213182-96-8 213182-97-9 213182-98-0 213183-09-6
 303117-48-8 328565-11-3 328565-12-4 328565-13-5 328565-14-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (Transition metal complexes of imino or nitrogen-contg. heterocycle
 ligands as catalysts for the **polymn.** of olefins)
- IT 213182-93-5P 328564-93-8P 328565-09-9P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
 (Reactant or reagent)
 (ligand; Transition metal complexes of imino or nitrogen-contg.
 heterocycle ligands as catalysts for the **polymn.** of
 olefins)
- IT 213182-90-2 213182-92-4 213182-94-6 213182-95-7 213182-99-1

213183-00-7 213183-01-8 213183-02-9 213183-03-0 213183-04-1
 213183-05-2 213183-06-3 213183-07-4 213183-13-2 213183-16-5
 328564-94-9 328564-95-0 328564-96-1 328564-97-2 328564-98-3
 328564-99-4 328565-07-7

RL: RCT (Reactant); RACT (Reactant or reagent)
 (ligand; Transition metal complexes of imino or nitrogen-contg.
 heterocycle ligands as catalysts for the **polymn.** of
olefins)

IT 7631-86-9, Silica, uses

RL: CAT (Catalyst use); USES (Uses)
 (support; Transition metal complexes of imino or nitrogen-contg.
 heterocycle ligands as catalysts for the **polymn.** of
olefins)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

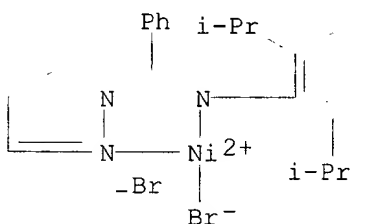
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- (2) Anon; WO 9830610 1998 HCAPLUS
- (3) Appel, R; Chemische Berichte Jahrg 1973, V106, P3450 HCAPLUS
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IT 328565-01-1

RL: CAT (Catalyst use); USES (Uses)
 (Transition metal complexes of imino or nitrogen-contg. heterocycle
 ligands as catalysts for the **polymn.** of
olefins)

RN 328565-01-1 HCAPLUS

CN Nickel, [1-[[[2,6-bis(1-methylethyl)phenyl]imino-.kappa.N]phenylmethyl]-1H-
 pyrazole-.kappa.N2]dibromo- (9CI) (CA INDEX NAME)



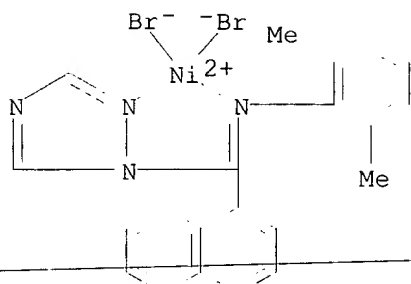
IT 213384-29-3P 213384-31-7P 213384-33-9P
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 213384-47-5P 213384-49-7P 213384-51-1P
 213384-53-3P 213384-55-5P 213384-57-7P
 328565-00-0P 328565-02-2P 328565-03-3P
 328565-04-4P 328565-05-5P 328565-06-6P
 328565-08-8P 328565-10-2P

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);
 USES (Uses)

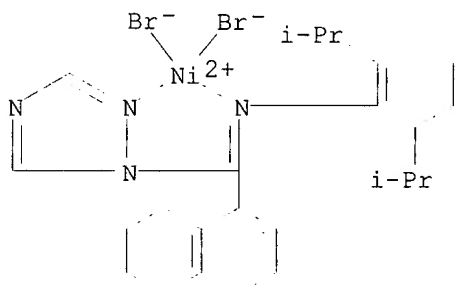
(Transition metal complexes of imino or nitrogen-contg. heterocycle
 ligands as catalysts for the **polymn.** of
olefins)

RN 213384-29-3 HCAPLUS

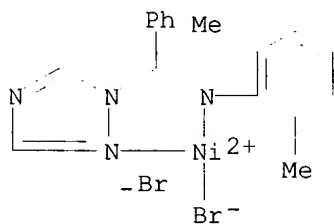
CN Nickel, dibromo[1-[[[2,6-dimethylphenyl]imino-.kappa.N]-1-
 naphthalenylmethyl]-1H-1,2,4-triazole-.kappa.N2]- (9CI) (CA INDEX NAME)



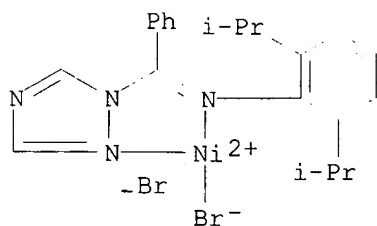
RN 213384-31-7 HCAPLUS
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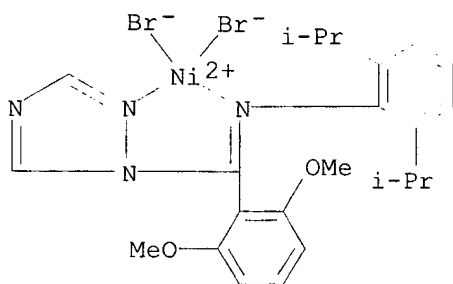
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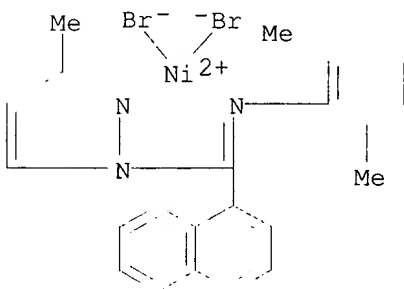
RN 213384-35-1 HCAPLUS
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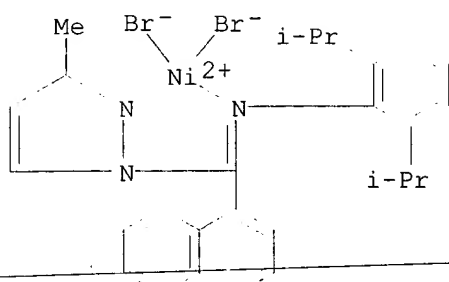
RN 213384-37-3 HCAPLUS
 CN Nickel, [1-[[[2,6-bis(1-methylethyl)phenyl]imino-.kappa.N](2,6-dimethoxyphenyl)methyl]-1H-1,2,4-triazole-.kappa.N2]dibromo- (9CI) (CA INDEX NAME)



RN 213384-39-5 HCAPLUS
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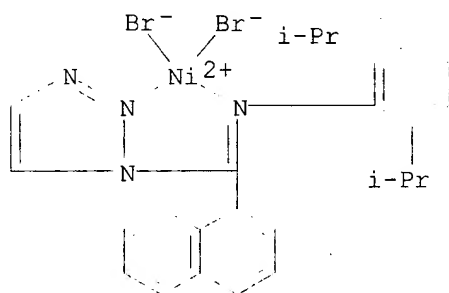


RN 213384-41-9 HCAPLUS
 CN Nickel, [1-[[[2,6-bis(1-methylethyl)phenyl]imino-.kappa.N]-1-naphthalenylmethyl]-3-methyl-1H-pyrazole-.kappa.N2]dibromo- (9CI) (CA INDEX NAME)



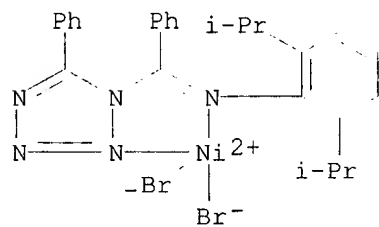
RN 213384-43-1 HCAPLUS

CN Nickel, [1-[[[2,6-bis(1-methylethyl)phenyl]imino-.kappa.N]-1-naphthalenylmethyl]-1H-1,2,3-triazole-.kappa.N2]dibromo- (9CI) (CA INDEX NAME)



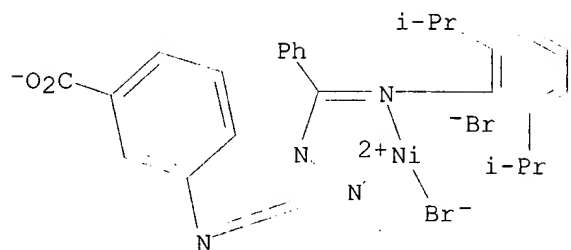
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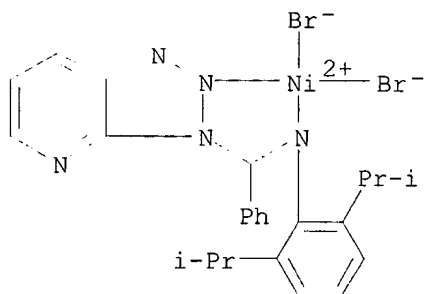
RN 213384-47-5 HCAPLUS

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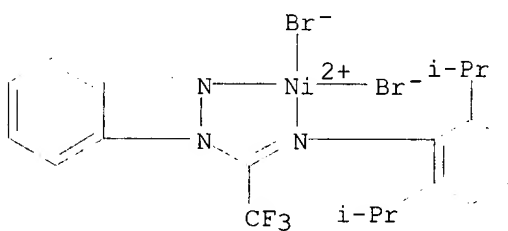


● H⁺

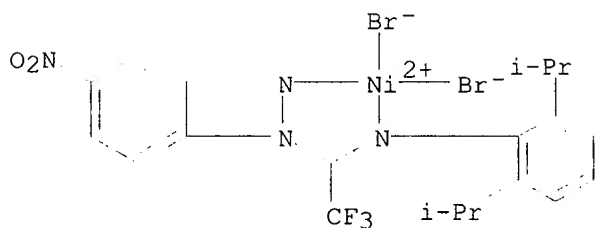
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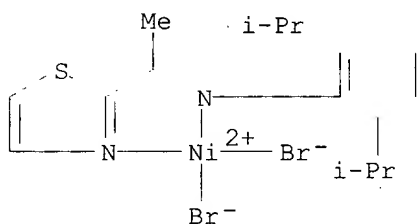
RN 213384-51-1 HCAPLUS
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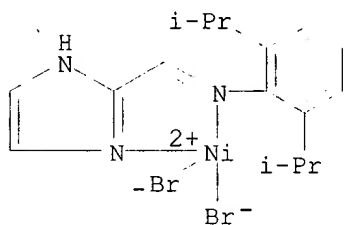
RN 213384-53-3 HCAPLUS
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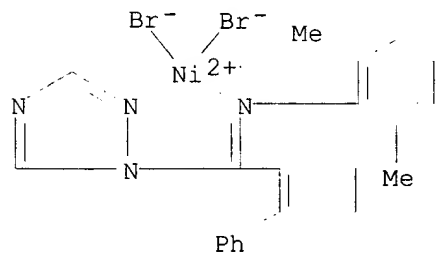
RN 213384-55-5 HCAPLUS
 CN Nickel, [2,6-bis(1-methylethyl)-N-[1-(2-thiazolyl-.kappa.N3)ethylidene]benzenamine-.kappa.N]dibromo- (9CI) (CA INDEX NAME)



RN 213384-57-7 HCAPLUS
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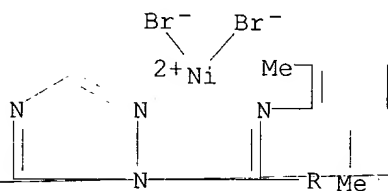


RN 328565-00-0 HCAPLUS
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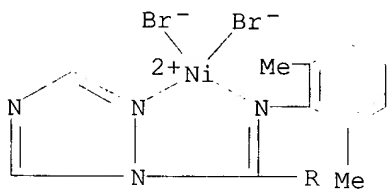
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(trifluoromethyl)phenyl)methyl]-1H-1,2,4-triazole-.kappa.N2]- (9CI) (CA INDEX NAME)



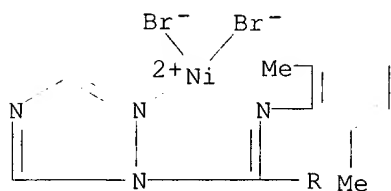
RN 328565-03-3 HCAPLUS

CN Nickel, dibromo[1-[[(2,6-dimethylphenyl) imino-.kappa.N] (4-methoxyphenyl)methyl]-1H-1,2,4-triazole-.kappa.N2]- (9CI) (CA INDEX NAME)



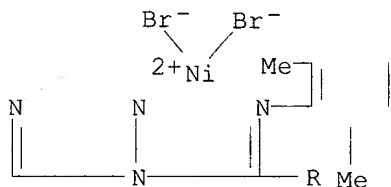
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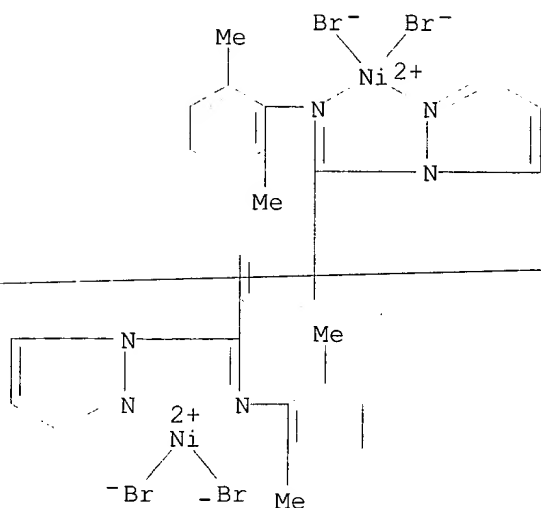
RN 328565-05-5 HCAPLUS

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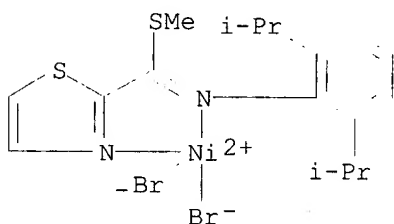


RN 328565-06-6 HCAPLUS

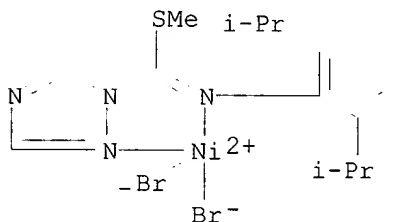
CN Nickel, tetrabromo[.mu.-[1,1'-[1,4-phenylenebis[(2,6-dimethylphenyl)imino-.kappa.N]methylene]]bis[1H-pyrazole-.kappa.N2]]di- (9CI) (CA INDEX NAME)



RN 328565-08-8 HCAPLUS
 CN Nickel, dibromo[methyl N-[2,6-bis(1-methylethyl)phenyl]-2-thiazolecarboximidothioate-.kappa.N2,.kappa.N3]-(9CI) (CA INDEX NAME)



RN 328565-10-2 HCAPLUS
 CN Nickel, dibromo[methyl N-[2,6-bis(1-methylethyl)phenyl]-1H-1,2,4-triazole-1-carboximidothioate-.kappa.N2,.kappa.N3]-(9CI) (CA INDEX NAME)



L31 ANSWER 6 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 2001:152696 HCAPLUS
 DN 134:208317
 TI Bisimidino compounds, their transition metal complexes, and use of the latter as polymerization catalysts
 IN Kristen, Marc Olivier; Gonioukh, Andrei; Lilge, Dieter; Lehmann, Stephan; Bildstein, Benno; Amort, Christoph; Malaun, Michael
 PA BASF A.-G., Germany

SO PCT Int. Appl., 53 pp.

CODEN: PIXXD2

DT Patent

LA German

IC ICM C07F015-02

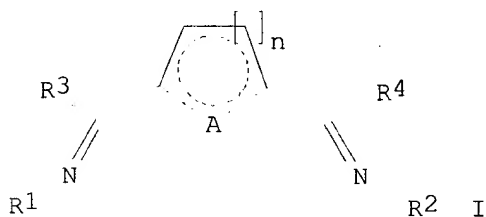
ICS C07F015-06; C08F004-70; C08F010-00; C07D213-53; C07D401-14

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 27, 28, 67, 78

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PT	WO 2001014391	A1	20010301	WO 2000-EP7657	20000808
	W: JP, KR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1204668	A1	20020515	EP 2000-956407	20000808
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY				
PRAI	DE 1999-19939415	A	19990820		
	WO 2000-EP7657	W	20000808		
OS	MARPAT 134:208317				
GI					



- AB The compds. have the general formula I [A = N, O, P, S; R1 = NR5R6; R2 = NR5R6, NR7R8, alkyl, aryl, cycloalkyl; R3, R4 = H, alkyl, aryl, cycloalkyl; NR5R6 forms an (un)substituted 5-, 6- or 7-membered ring, which can be annellated with (un)substituted 5- or 6-membered rings; R7, R8 = alkyl, aryl, cycloalkyl; n = 1, 2]. Thus, MeCOCH2CH2COCHMe2 was condensed with AcNHNH2 to give 53% 1-acetamido-2-isopropyl-5-methylpyrrole, which was deacetylated and condensed 2:1 with 2,6-diacetylpyridine to give a diimine, which was complexed with FeCl2. Copolymn. of ethylene with 1-hexene in toluene in the presence of Me aluminoxane and the complex at 30.degree. for 1 h gave a copolymer with catalyst efficiency 980 g/mmol catalyst-h.
- ST transition metal complex **olefin polymn** catalyst; iron complex **ethylene polymn** catalyst; cobalt complex **ethylene polymn** catalyst; bisimidino compd transition metal complex
- IT Aluminoxanes
RL: CAT (Catalyst use); USES (Uses)
(Me, cocatalyst; transition metal complexes with bisimidino ligands as **olefin polymn.** catalysts)
- IT Silica gel, uses
RL: CAT (Catalyst use); USES (Uses)
(catalyst support; transition metal complexes with bisimidino ligands as **olefin polymn.** catalysts)
- IT Polymerization catalysts
(transition metal complexes with bisimidino ligands as **olefin**

polymn. catalysts)

IT Polyolefins
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (transition metal complexes with bisimidino ligands as olefin
 polymn. catalysts)

IT 118612-00-3, N,N-Dimethylanilinium tetrakis(pentafluorophenyl)borate
 RL: CAT (Catalyst use); USES (Uses)
 (cocatalyst; transition metal complexes with bisimidino ligands as
 olefin polymn. catalysts)

IT 289708-74-3P 289708-75-4P 289708-76-5P
 289708-77-6P 289708-81-2P 289708-82-3P
 328239-71-0P 328239-72-1P 328239-73-2P
 328239-74-3P 328239-75-4P 328239-76-5P
 328239-77-6P 328239-78-7P 328239-79-8P
 328239-81-2P
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
 USES (Uses)
 (prepn. of transition metal complexes with bisimidino ligands
)

IT 78-94-4, Methyl vinyl ketone, reactions 110-13-4, 2,5-Hexanedione
 529-20-4, o-Tolualdehyde 583-05-1, 1-Phenyl-1,4-pentanedione 765-71-9,
 1-Amino-2,5-dimethylpyrrole 786-98-1 932-95-6, 2,5-
 Thiophenedicarboxaldehyde 1068-57-1, Acetyl hydrazide 1129-30-2,
 2,6-Diacetylpyridine 3530-15-2, 4-Amino-3,5-dimethyl-1,2,4-triazole
 13901-85-4, 6-Methyl-2,5-heptanedione 17223-85-7, N-Aminocarbazole
 53406-41-0 289708-63-0
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. of transition metal complexes with bisimidino ligands)

IT 3042-24-8P 3042-25-9P 33451-79-5P 195137-30-5P, 1-(2-Methylphenyl)-
 1,4-pentanedione 289708-72-1P 289708-73-2P 289708-86-7P
 289709-39-3P 328239-59-4P 328239-60-7P 328239-61-8P 328239-62-9P
 328239-63-0P 328239-64-1P 328239-65-2P 328239-66-3P 328239-67-4P
 328239-68-5P 328239-69-6P 328239-70-9P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (prepn. of transition metal complexes with bisimidino ligands)

IT 289708-96-9P 328239-80-1P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of transition metal complexes with bisimidino ligands
)

IT 9002-88-4P, Polyethylene 9003-07-0P, Polypropylene 25213-02-9P,
 Ethylene-1-hexene copolymer
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (transition metal complexes with bisimidino ligands as olefin
 polymn. catalysts)

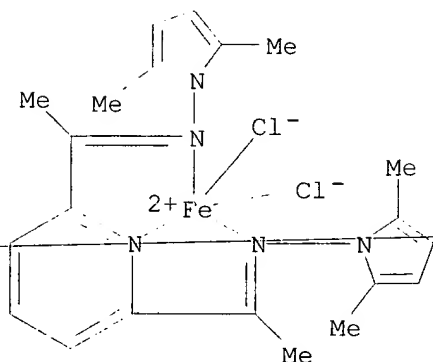
RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

(1) Dorer Birgit Angelika; WO 9912981 A 1999 HCAPLUS

IT 289708-74-3P 289708-75-4P 289708-76-5P
 289708-77-6P 289708-81-2P 289708-82-3P
 328239-71-0P 328239-72-1P 328239-73-2P
 328239-74-3P 328239-75-4P 328239-76-5P
 328239-77-6P 328239-78-7P 328239-79-8P
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
 USES (Uses)
 (prepn. of transition metal complexes with bisimidino ligands
)

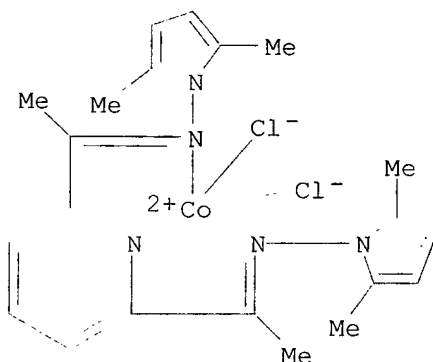
RN 289708-74-3 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,5-
 dimethyl-1H-pyrrol-1-amine-.kappa.NN1]]- (9CI) (CA INDEX NAME)



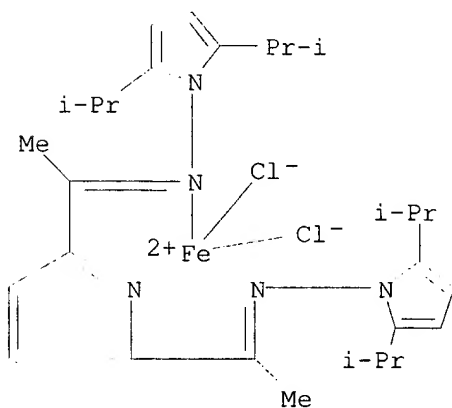
RN 289708-75-4 HCAPLUS

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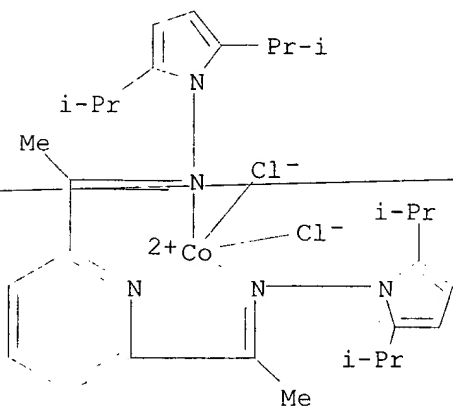
RN 289708-76-5 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,5-bis(1-methylethyl)-1H-pyrrol-1-amine-.kappa.NN1]]- (9CI) (CA INDEX NAME)



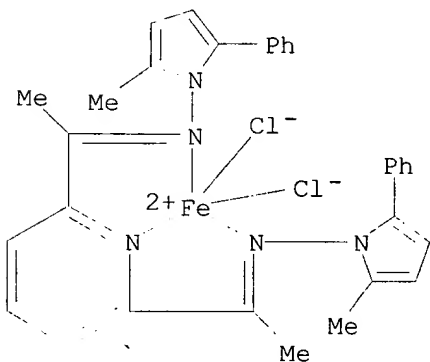
RN 289708-77-6 HCAPLUS

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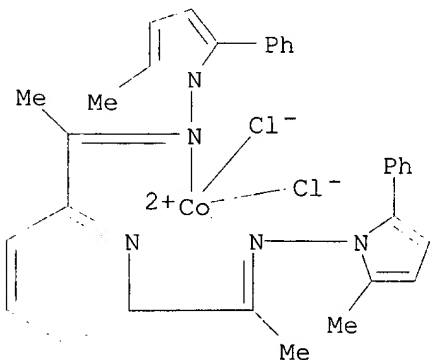
RN 289708-81-2 HCAPLUS

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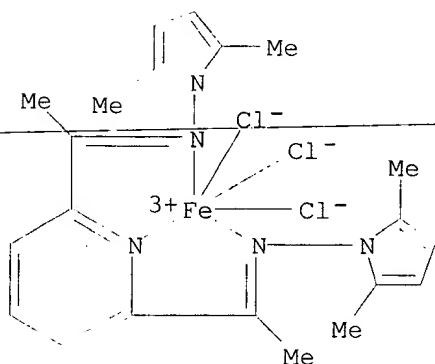
RN 289708-82-3 HCAPLUS

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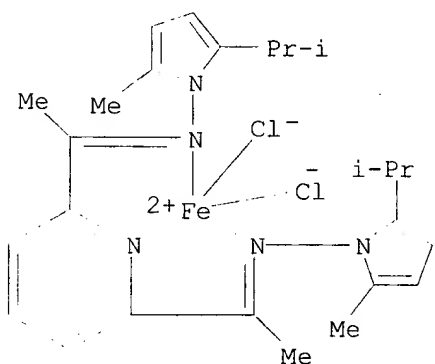
RN 328239-71-0 HCAPLUS

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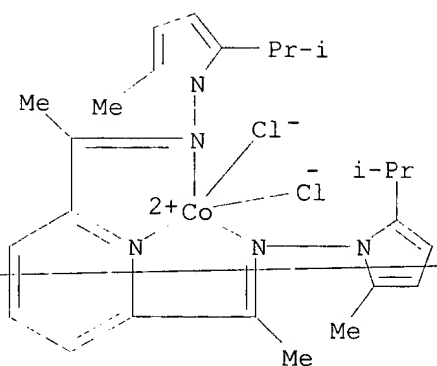
RN 328239-72-1 HCAPLUS

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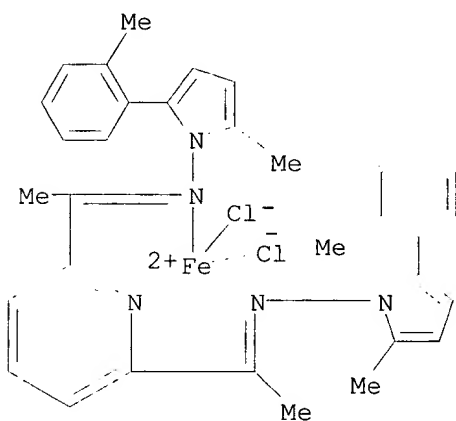
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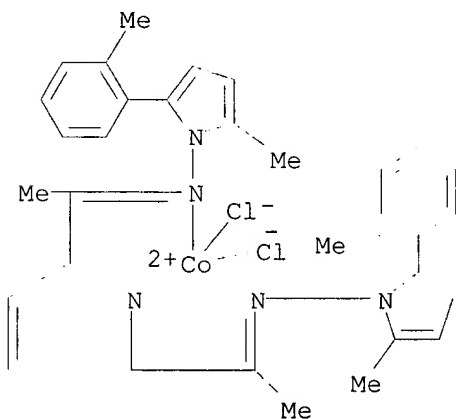
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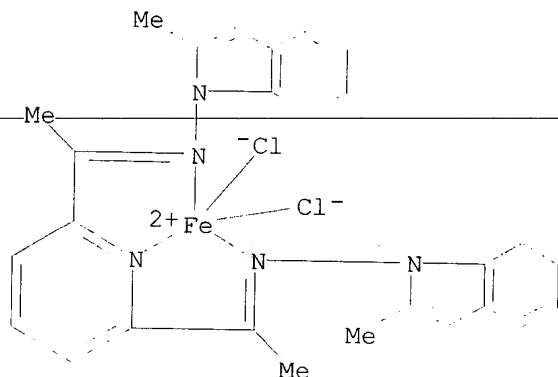


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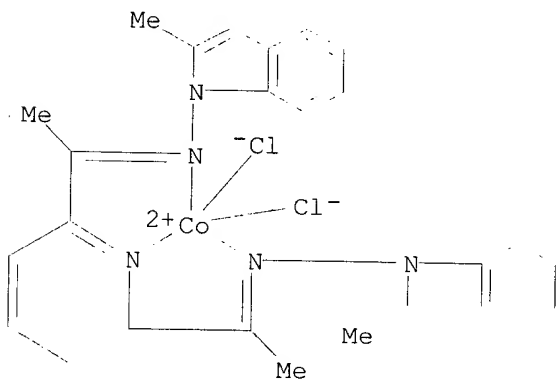
CN Cobalt, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2-methyl-5-(2-methylphenyl)-1H-pyrrol-1-amine-.kappa.NN1]]- (9CI) (CA INDEX NAME)



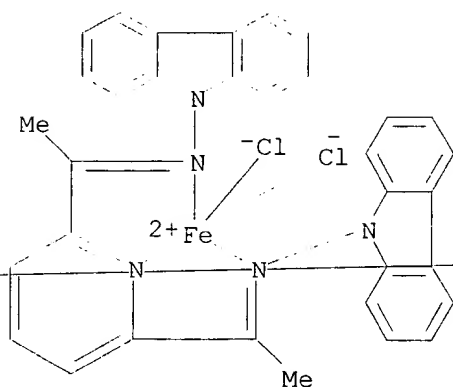
RN 328239-76-5 HCAPLUS
 CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2-methyl-1H-indol-1-amine-.kappa.NN1]]- (9CI) (CA INDEX NAME)



RN 328239-77-6 HCAPLUS
 CN Cobalt, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2-methyl-1H-indol-1-amine-.kappa.NN1]]- (9CI) (CA INDEX NAME)

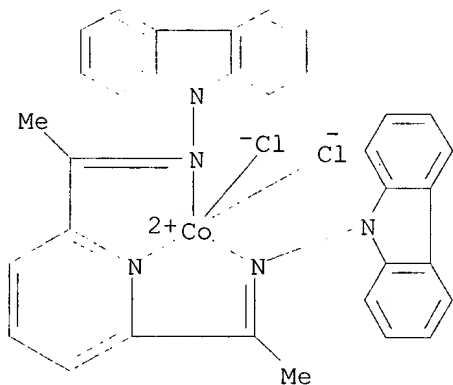


RN 328239-78-7 HCAPLUS
 CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[9H-carbazol-9-amine-.kappa.NN9]]- (9CI) (CA INDEX NAME)



RN 328239-79-8 HCAPLUS

CN Cobalt, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[9H-carbazol-9-amine-.kappa.NN9]]- (9CI) (CA INDEX NAME)

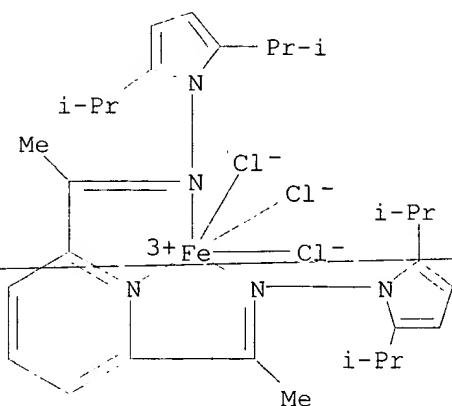


IT 289708-96-9P 328239-80-1P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of transition metal complexes with bisimidino ligands)

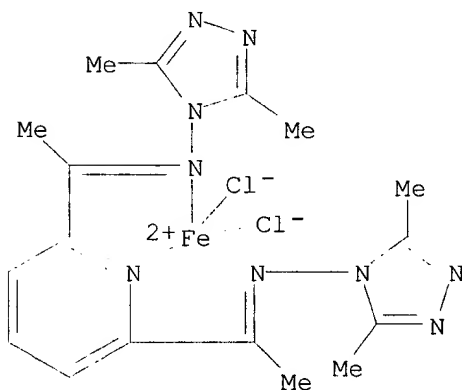
RN 289708-96-9 HCAPLUS

CN Iron, trichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,5-bis(1-methylethyl)-1H-pyrrol-1-amine-.kappa.NN1]]- (9CI) (CA INDEX NAME)



RN 328239-80-1 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[3,5-dimethyl-4H-1,2,4-triazol-4-amine-.kappa.NN4]]- (9CI) (CA INDEX NAME)



L31 ANSWER 7 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 2001:115157 HCAPLUS

DN 134:178960

TI Metal complexes comprising a 2,6-diacylpyridine ligand and their use as **ethylene polymerization** catalysts

IN Sommazzi, Anna; Milani, Barbara; Proto, Antonio; Corso, Gianni; Mestroni, Giovanni; Masi, Francesco

PA Enichem S.p.A., Italy

SO PCT Int. Appl., 58 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C07F015-02

ICS C07D213-53; C07F015-06; C08F010-02; C08F004-70

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 78

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001010875	A1	20010215	WO 2000-EP7549	20000803

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW

IT	99MI1764	A1	20010205	IT	1999-MI1764	19990805
GB	2369120	A1	20020522	GB	2002-4115	20000803
FI	2002000195	A	20020201	FI	2002-195	20020201
SE	2002000323	A	20020320	SE	2002-323	20020205
PRAI	IT 1999-MI1764	A	19990805			
	WO 2000-EP7549	W	20000803			

OS MARPAT 134:178960

AB An organometallic complex (Q)M(X)n (M = transition metal in pos. oxidn. state; Q = 2,6-diacetylpyridine monoimine; each X = anionic ligand; n as necessary for neutrality of charge) can be used for the formation of catalytic systems. The complex is prep'd. by relatively simple methods and can be used, combined with a suitable cocatalyst such as an aluminoxane, as a catalyst in (co)polymn. of .alpha.-olefins, esp. ethylene. Thus, 2,6-diacetylpyridine was condensed 1:1 with 2,6-diisopropylaniline to give a monoimine, which was complexed with CoCl₂. Polymn. of ethylene (0.7 MPa) with this complex and Me aluminoxane (Al/Co = 80) in toluene at 25 .fwdarw. 42.degree. for 30 min gave polyethylene of Mw 12,673 and Mw/Mn 7.5 at 150 g/mmol Co, compared with 11,453, 3.2, and 330 g/mmol Co at 25 .fwdarw. 54.degree. for a catalyst contg. the diimine as ligand.

ST ethylene polymn catalyst; diacetylpyridine monoimine transition metal complex; polyolefin manuf transition metal complex catalyst

IT Aluminoxanes
RL: CAT (Catalyst use); USES (Uses)
(Me, cocatalyst, Eurecen 5100-10T; metal complexes comprising a diacetylpyridine monoimine ligand as polymn. catalysts)

IT Polymerization catalysts
(metal complexes comprising a diacetylpyridine monoimine ligand as olefin polymn. catalysts)

IT Polyolefins
RL: IMF (Industrial manufacture); PREP (Preparation)
(metal complexes comprising a diacetylpyridine monoimine ligand as polymn. catalysts)

IT 326613-35-8P 326613-37-0P 326613-40-5P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(metal complexes comprising a diacetylpyridine monoimine ligand as polymn. catalysts)

IT 9002-88-4P, Polyethylene
RL: IMF (Industrial manufacture); PREP (Preparation)
(metal complexes comprising a diacetylpyridine monoimine ligand as polymn. catalysts)

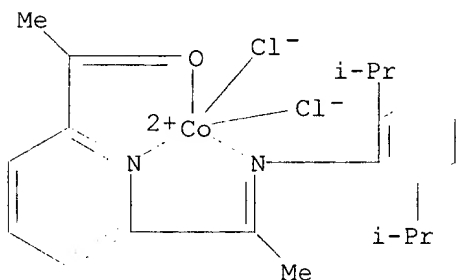
IT 62-53-3, Aniline, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of diacetylpyridine imines)

IT 55137-80-9P, 2,6-Bis[1-(phenylimino)ethyl]pyridine
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of diacetylpyridine imines)

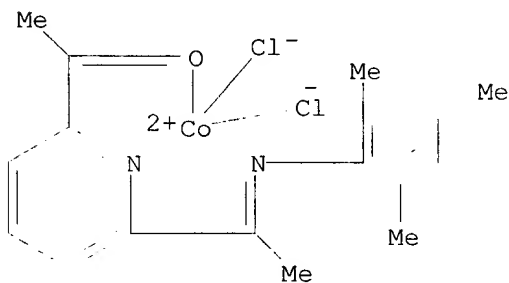
IT 263705-60-8P 326613-32-5P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of metal complexes comprising a diacetylpyridine monoimine ligand as polymn. catalysts)

IT 88-05-1, 2,4,6-Trimethylaniline 1129-30-2, 2,6-Diacetylpyridine
 6310-21-0, 2-tert-Butylaniline 24544-04-5, 2,6-Diisopropylaniline
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. of metal complexes comprising a diacetylpyridine monoimine ligand
 as polymn. catalysts)
 IT 326613-30-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. of metal complexes comprising a diacetylpyridine monoimine ligand
 as polymn. catalysts)
 RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

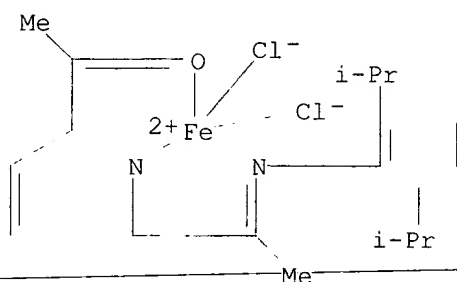
(1) Du Pont; WO 9827124 A 1998 HCAPLUS
 (2) Luks; COLLECT CZECH CHEM COMMUN 1998, V63(3), P371 HCAPLUS
 IT 326613-35-8P 326613-37-0P 326613-40-5P
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);
 USES (Uses)
 (metal complexes comprising a diacetylpyridine monoimine ligand
 as polymn. catalysts)
 RN 326613-35-8 HCAPLUS
 CN Cobalt, [1-[6-[1-[[2,6-bis(1-methylethyl)phenyl]imino-.kappa.N]ethyl]-2-
 pyridinyl-.kappa.N]ethanone-.kappa.O]dichloro- (9CI) (CA INDEX NAME)



RN 326613-37-0 HCAPLUS
 CN Cobalt, dichloro[1-[6-[1-[(2,4,6-trimethylphenyl)imino-.kappa.N]ethyl]-2-
 pyridinyl-.kappa.N]ethanone-.kappa.O]- (9CI) (CA INDEX NAME)

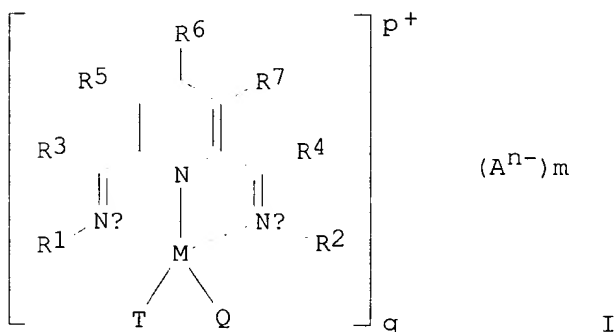


RN 326613-40-5 HCAPLUS
 CN Iron, [1-[6-[1-[[2,6-bis(1-methylethyl)phenyl]imino-.kappa.N]ethyl]-2-
 pyridinyl-.kappa.N]ethanone-.kappa.O]dichloro- (9CI) (CA INDEX NAME)



L31 ANSWER 8 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 2001:78431 HCAPLUS
 DN 134:148001
 TI Transition metal complexes with tridentate ligands and their use as
 catalysts in manufacture of olefin (co)polymers
 IN Luinstra, Gerrit; Werne, Gerald; Rief, Ursula; Kristen, Marc Oliver;
 Queisser, Joachim; Geprags, Michael
 PA BASF Aktiengesellschaft, Germany
 SO PCT Int. Appl., 31 pp.
 CODEN: PIXXD2
 DT Patent
 LA German
 IC ICM C08F010-00
 ICS C08F004-70; C08F210-00; C07F015-02; C07F015-06; C07F015-00
 CC 35-3 (Chemistry of Synthetic High Polymers)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001007491	A1	20010201	WO 2000-EP6559	20000711
	W: JP, KR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
PRAI	DE 1999-19934463	A	19990727		
OS	MARPAT 134:148001				
GI					



AB The complexes have the formula I [A is a noncoordinating or barely coordinating anion; M = Fe, Ru, Co, Rh; Q, T = neutral or monoanionic monodentate ligand; R1, R2 = C6-16 aryl with halo, nitro, cyano, sulfo or trihalomethyl substituents in both positions ortho to the bond to Na or

Nb; R3, R4 = H, C1-10 alkyl, C3-10 cycloalkyl, C6-16 aryl, alkylaryl with 1-10 C atoms in the alkyl portion and 6-14 C atoms in the aryl portion, SiR83; R5-R7 = H, C1-10 alkyl, C3-10 cycloalkyl, C6-16 aryl, alkylaryl with 1-10 C atoms in the alkyl portion and 6-14 C atoms in the aryl portion, SiR83, functional groups consisting of Group IVA-VIIA elements, or R5R6 and/or R6R7 form a five- to seven-membered (un)substituted fused ring; R8 = C1-10 alkyl, C3-10 cycloalkyl, C6-16 aryl, alkylaryl with 1-10 C atoms in the alkyl portion and 6-14 C atoms in the aryl portion; m, p = 0-3; n, q = 1-3]. .alpha.-Olefins are homo- or copolymd. in the presence of .gtoreq.1 I and a cocatalyst consisting of a strong neutral Lewis acid or an ionic compd. having a Lewis or Bronsted acid cation. Thus, 2,6-dichloroaniline was condensed 2:1 with 2,6-diacetylpyridine and the product treated with FeCl2 to give a I, which was used with Me aluminoxane to **polymerize ethylene** to a homopolymer with Mw/Mn 3.01.

ST transition metal complex **olefin polymn** catalyst
 IT Aluminoxanes
 RL: CAT (Catalyst use); USES (Uses)
 (Me, cocatalyst; transition metal complexes with tridentate ligands as **olefin polymn.** catalysts)
 IT Lewis acids
 RL: CAT (Catalyst use); USES (Uses)
 (cocatalysts; transition metal complexes with tridentate ligands as **olefin polymn.** catalysts)
 IT Polymerization catalysts
 (transition metal complexes with tridentate ligands as **olefin polymn.** catalysts)
 IT 323179-69-7P 323179-71-1P
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (prepn. of transition metal complexes with tridentate **ligands** as **olefin polymn.** catalysts)
 IT 608-31-1, 2,6-Dichloroaniline 1129-30-2, 2,6-Diacetylpyridine 6968-24-7, 2,6-Dibromo-4-methylaniline
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. of transition metal complexes with tridentate ligands as **olefin polymn.** catalysts)
 IT 323179-67-5P 323179-70-0P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (prepn. of transition metal complexes with tridentate ligands as **olefin polymn.** catalysts)
 IT 9002-88-4P, Polyethylene 25213-02-9P, Ethylene-1-hexene copolymer
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (transition metal complexes with tridentate ligands as **olefin polymn.** catalysts)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

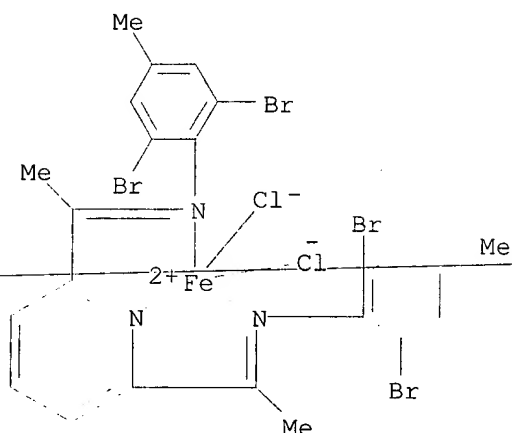
RE

- (1) Brookhart, M; WO 9847934 A 1998 HCAPLUS
- (2) Dorer, B; WO 9912981 A 1999 HCAPLUS
- (3) Du Pont; WO 9827124 A 1998 HCAPLUS

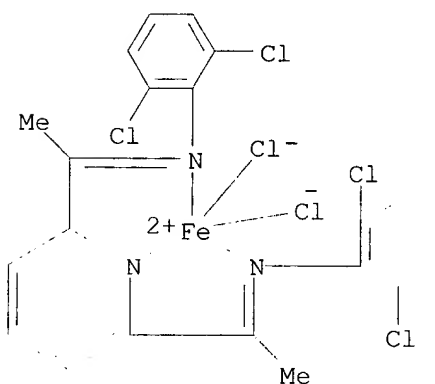
IT 323179-69-7P 323179-71-1P
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (prepn. of transition metal complexes with tridentate **ligands** as **olefin polymn.** catalysts)

RN 323179-69-7 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-dibromo-4-methylbenzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



RN 323179-71-1 HCAPLUS
 CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-dichlorobenzeneamine-.kappa.N]]- (9CI) (CA INDEX NAME)



L31 ANSWER 9 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 2000:909415 HCAPLUS
 DN 134:208205
 TI **Ethylene polymerization** and copolymerization with higher .alpha.-olefins using catalysts based on iron chlorides containing 2,6-bis(imino)pyridine ligands
 AU Ivancheva, N. I.; Badaev, V. K.; Oleinik, I. I.; Ivanchev, S. S.; Tolstikov, G. A.
 CS S.-Peterb. Fil. Inst. Kataliza im. G. K. Boreskova, Sib. Otd. Ross. Akad. Nauk, St. Petersburg, Russia
 SO Doklady Akademii Nauk (2000), 374(5), 648-650
 CODEN: DAKNEQ; ISSN: 0869-5652
 PB MAIK Nauka
 DT Journal
 LA Russian
 CC 35-3 (Chemistry of Synthetic High Polymers)
 AB Four new 2,6-bis[(4- or/and 6-alkyl-2-cyclopentylphenylimino)pyridine] iron(II) dichloride complexes (alkyl - H or Me) were tested as catalysts for **ethylene polymn.** and copolymn. with 1-octene and

4-methylpentene. The catalysts yielded polyethylene with yields comparable to those obtained on the metallocene catalysts.

ST iron bis(imino)pyridine chloride catalyst **ethylene polymn**
octene methylpentene

IT **Polymerization** catalysts
Substituent effects

(**ethylene polymn.** and copolymn. with .alpha.-
olefins using FeCl₂-based catalysts contg. 2,6-
bis(imino)pyridine ligands)

IT 328313-03-7 328313-05-9 328313-06-0
328313-08-2

RL: CAT (Catalyst use); USES (Uses)

(**ethylene polymn.** and copolymn. with .alpha.-
olefins using FeCl₂-based catalysts contg. 2,6-
bis(imino)pyridine **ligands**)

IT 9002-88-4P, Polyethylene 26221-73-8P, **Ethylene**-1-octene
copolymer 130315-97-8P, **Ethylene**-4-methylpentene copolymer

RL: SPN (Synthetic preparation); PREP (Preparation)

(**ethylene polymn.** and copolymn. with .alpha.-
olefins using FeCl₂-based catalysts contg. 2,6-
bis(imino)pyridine ligands)

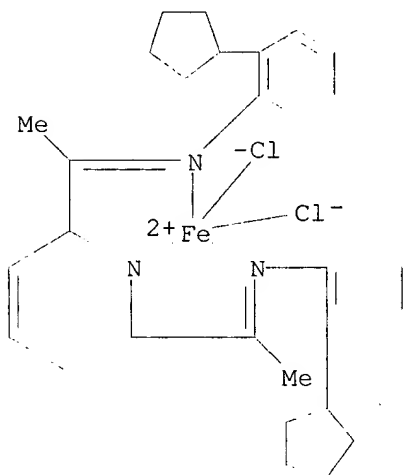
IT 328313-03-7 328313-05-9 328313-06-0
328313-08-2

RL: CAT (Catalyst use); USES (Uses)

(**ethylene polymn.** and copolymn. with .alpha.-
olefins using FeCl₂-based catalysts contg. 2,6-
bis(imino)pyridine **ligands**)

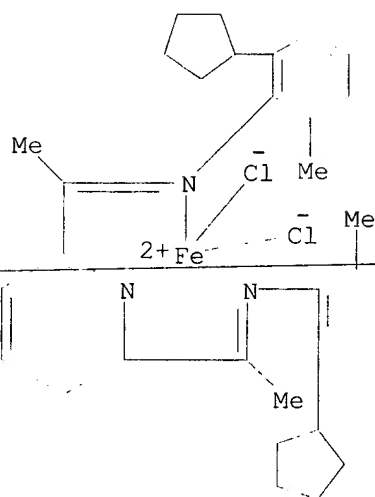
RN 328313-03-7 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2-
cyclopentylbenzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



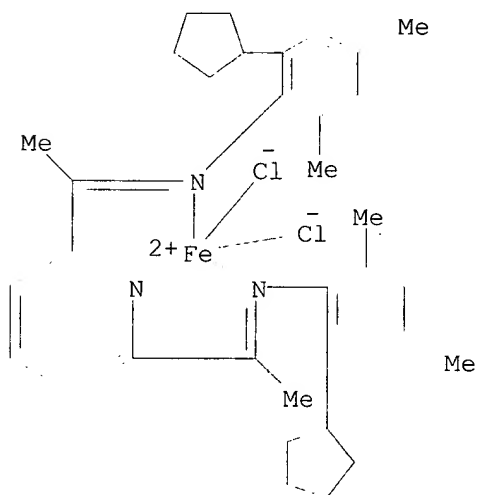
RN 328313-05-9 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2-
cyclopentyl-6-methylbenzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



RN 328313-06-0 HCAPLUS

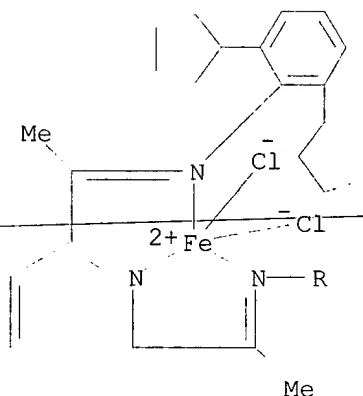
CN Iron, dichloro[N,N'-(2,6-pyridinediyl-kappa.N)diethylidyne]bis[2-cyclopentyl-4,6-dimethylbenzenamine-kappa.N]]- (9CI) (CA INDEX NAME)



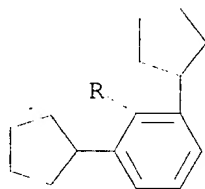
RN 328313-08-2 HCAPLUS

CN Iron, dichloro[N,N'-(2,6-pyridinediyl-kappa.N)diethylidyne]bis[2,6-dicyclopentylbenzenamine-kappa.N]]- (9CI) (CA INDEX NAME)

PAGE 1-A

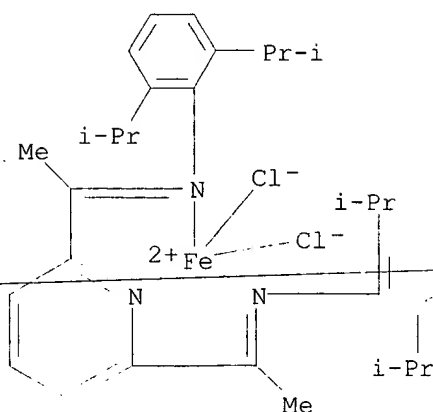


PAGE 2-A

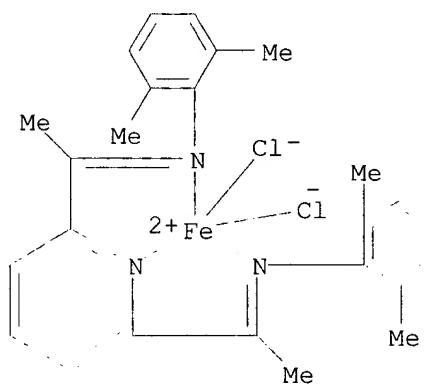


- L31 ANSWER 10 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 2000:785358 HCAPLUS
 DN 134:86580
 TI The behavior of homogeneous iron-based catalysts bearing pyridine diimine ligands for **ethylene polymerization**
 AU Qiu, Jiao-Ming; Sun, Ling-Gang; Hu, You-Liang; Li, Yu-Fei
 CS State Key Laboratory of Engineering Plastics, Center for Molecular Science Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China
 SO Chinese Journal of Polymer Science (2000), 18(6), 509-513
 CODEN: CJPSEG; ISSN: 0256-7679
 PB Springer-Verlag
 DT Journal
 LA English
 CC 35-3 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 28, 78
 AB The **polymn.** of **ethylene** by two iron-based catalysts, [2,6-ArN:CM₂C₅H₃N]FeCl₂ with Ar = 2,6-Me₂C₆H₃ (I) and with Ar = 2,6-iso-Pr₂C₆H₃ (II) has been investigated. II in conjunction with Me aluminoxane produces higher mol. wt. polyethylene (PE) and broadened polydispersities relative to I under analogous conditions and all polymers are linear. The kinetic profiles with both catalysts showed a smooth pattern during both rate build-up and rate lowering, which are different from metallocene catalysts. The polymn. activity increases with Al/Fe ratio and an optimum temp. range of 40.apprx.45.degree.C was obsd. The PE mol. wt. decreases with increasing Al/Fe ratio and polymn. temp.
 ST iron complex pyridine diimine catalyst polymn; **ethylene polymn** iron complex catalyst

- IT Aluminoxanes
RL: CAT (Catalyst use); USES (Uses)
(Me, cocatalysts; homogeneous iron-based catalysts bearing pyridine diimine ligands for **polymn. of ethylene**)
- IT **Polymerization** kinetics
(of **ethylene** in presence of homogeneous iron-based catalysts bearing pyridine diimine ligands)
- IT Polymerization catalysts
(prepn. of homogeneous iron-based catalysts bearing pyridine diimine ligands for **polymn. of ethylene**)
- IT 74-85-1, Ethylene, reactions
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(homogeneous iron-based catalysts bearing pyridine diimine ligands for **polymn. of**)
- IT 9002-88-4P, Polyethylene
RL: SPN (Synthetic preparation); PREP (Preparation)
(homogeneous iron-based catalysts bearing pyridine diimine ligands for prepn. of)
- IT 204203-14-5P 204203-16-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; prepn. of homogeneous iron-based catalysts bearing pyridine diimine ligands for **polymn. of ethylene**)
- IT **204203-10-1P 207129-93-9P**
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. of homogeneous iron-based catalysts bearing pyridine diimine ligands for **polymn. of ethylene**)
- IT 87-62-7, 2,6-Dimethylaniline 7758-94-3, Ferrous chloride 20857-17-4, 2,4-Diacetylpyridine 24544-04-5, 2,6-Diisopropylaniline
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; prepn. of homogeneous iron-based catalysts bearing pyridine diimine ligands for **polymn. of ethylene**)
- RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
- RE
- (1) Britovsek, G; Chem Commun 1998, P849
 - (2) Brookhart, M; WO 9830612 1998 HCAPLUS
 - (3) Chien, J; J Polym Sci Part A 1986, V24, P2483 HCAPLUS
 - (4) Chien, J; J Polym Sci Part A 1988, V26, P2369 HCAPLUS
 - (5) Freenatle, M; C & EN 1998, P11
 - (6) Johnson, L; J Am Chem Soc 1996, V118, P267 HCAPLUS
 - (7) Killian, C; J Am Chem Soc 1995, V117, P6414
 - (8) Killian, C; J Am Chem Soc 1996, V118, P11664 HCAPLUS
 - (9) Reddy, S; Prog Polym Sci 1995, V20, P309 HCAPLUS
 - (10) Small, B; J Am Chem Soc 1998, V120, P4049 HCAPLUS
 - (11) Small, B; Macromolecules 1999, V32, P2120 HCAPLUS
- IT **204203-10-1P 207129-93-9P**
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. of homogeneous iron-based catalysts bearing pyridine diimine ligands for **polymn. of ethylene**)
- RN 204203-10-1 HCAPLUS
- CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-bis(1-methylethyl)benzenamine-.kappa.N]]-, (SP-5-13)- (9CI) (CA INDEX NAME)



RN 207129-93-9 HCAPLUS
 CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-dimethylbenzenamine-.kappa.N]]-, (SP-5-13)-(9CI) (CA INDEX NAME)



L31 ANSWER 11 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 2000:384252 HCAPLUS
 DN 133:5119
 TI Catalysts for **olefin polymerization** and process for producing **olefin** polymers
 IN Okuda, Fumio
 PA Idemitsu Petrochemical Co., Ltd., Japan
 SO PCT Int. Appl., 27 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 IC ICM C08F004-70
 ICS C08F010-00
 CC 35-3 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 67

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000032643	A1	20000608	WO 1999-JP6768	19991202
	W: JP, KR, US				

KATHLEEN FULLER EIC 1700/LAW LIBRARY 308-4290

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
PT, SE

EP 1054022 A1 20001122 EP 1999-973041 19991202

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, FI

PRAI JP 1998-342458 A 19981202

WO 1999-JP6768 W 19991202

OS MARPAT 133:5119

AB The catalysts comprise a compd. of a transition metal in Groups 8-10 of the Periodic Table having a nitrogenous tridentate ligand and an organoaluminum compd. such as trimethylaluminum. The catalysts are highly active and enable a high-mol. polyolefin to be produced. Consequently, a high-mol. polyolefin (esp. polyethylene) suitable for practical use can be industrially advantageously produced without using methylaluminoxane, which is expensive, has poor handleability and poor storage stability, and is highly dangerous.

ST **ethylene polymn** catalyst; nitrogen tridentate ligand

transition metal complex catalyst; polyolefin high mol wt prepn

IT Polymerization catalysts

(highly active transition metal complex catalysts contg. nitrogenous tridentate ligands for **olefin polymn.**)

IT Transition metal complexes

RL: CAT (Catalyst use); USES (Uses)

(highly active transition metal complex catalysts contg. nitrogenous tridentate ligands for **olefin polymn.**)

IT Polyolefins

RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)

(highly active transition metal complex catalysts contg. nitrogenous tridentate ligands for **olefin polymn.**)

IT 75-24-1, Trimethylaluminum 100-99-2, Triisobutylaluminum, uses

204203-10-1

RL: CAT (Catalyst use); USES (Uses)

(highly active transition metal complex catalysts contg. nitrogenous tridentate ligands for **olefin polymn.**)

IT 9002-88-4P, Polyethylene

RL: IMF (Industrial manufacture); PREP (Preparation)

(highly active transition metal complex catalysts contg. nitrogenous tridentate ligands for **olefin polymn.**)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) E I Du Pont de Nemours And Company; US 5955555 A HCAPLUS

(2) E I Du Pont de Nemours And Company; EP 946609 A1 HCAPLUS

(3) E I Du Pont de Nemours And Company; EP 951489 A1 HCAPLUS

(4) E I Du Pont de Nemours And Company; WO 9827124 A 1998 HCAPLUS

(5) E I Du Pont de Nemours And Company; WO 9830612 A 1998 HCAPLUS

(6) Mitsui Chemicals Ltd; JP 107712 A 1998

(7) Mitsui Chemicals Ltd; JP 20001512 A 2000

(8) Mitsui Chemicals Ltd; JP 20001513 A 2000

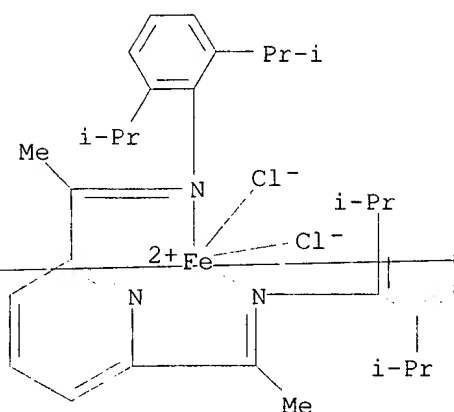
IT **204203-10-1**

RL: CAT (Catalyst use); USES (Uses)

(highly active transition metal complex catalysts contg. nitrogenous tridentate ligands for **olefin polymn.**)

RN **204203-10-1** HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-bis(1-methylethyl)benzenamine-.kappa.N]]-, (SP-5-13)- (9CI) (CA INDEX NAME)



L31 ANSWER 12 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 2000:384251 HCAPLUS
 DN 133:17992
 TI Catalysts for **olefin polymerization** and process for
 producing **olefin** polymers
 IN Okuda, Fumio; Sato, Haruhito; Kuramoto, Masahiko
 PA Idemitsu Petrochemical Co., Ltd., Japan
 SO PCT Int. Appl., 52 pp.
 CODEN: PIXXD2

DT Patent
 LA Japanese
 IC ICM C08F004-70
 ICS C08F010-00
 CC 35-3 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 67

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000032642	A1	20000608	WO 1999-JP6767	19991202
	W: JP, KR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1054021	A1	20001122	EP 1999-957408	19991202
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRAI	JP 1998-342457	A	19981202		
	JP 1998-342459	A	19981202		
	WO 1999-JP6767	W	19991202		
OS	MARPAT 133:17992				
AB	The catalysts comprise a compd. of a transition metal in Groups 8-10 of the Periodic Table having a nitrogenous tridentate ligand, a clay, clay mineral, or lamellar ion-exchanging compd., an organosilane compd., an organoaluminum compd., etc. The catalysts are highly active, do not adhere to reactor walls, and can give a polyolefin excellent in powder morphol. Consequently, a polyolefin (esp. polyethylene) can be industrially advantageously produced.				
ST	ethylene polymn catalyst; nitrogen tridentate ligand transition metal complex catalyst; polyolefin high mol wt prepn				
IT	Polymerization catalysts (highly active transition metal complex catalysts contg. nitrogenous tridentate ligands for olefin polymn.)				

IT Clays, uses
Transition metal complexes
RL: CAT (Catalyst use); USES (Uses)
(highly active transition metal complex catalysts contg. nitrogenous tridentate ligands for **olefin polymn.**)

IT Polyolefins
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)
(highly active transition metal complex catalysts contg. nitrogenous tridentate ligands for **olefin polymn.**)

IT Ion exchangers
(lamellar; highly active transition metal complex catalysts contg. nitrogenous tridentate ligands for **olefin polymn.**)

IT 75-24-1, Trimethylaluminum 100-99-2, Triisobutylaluminum, uses
1318-93-0, Montmorillonite, uses 7786-30-3, Magnesium chloride, uses
114502-16-8 187247-40-1, Kunipia F 204203-10-1
RL: CAT (Catalyst use); USES (Uses)
(highly active transition metal complex catalysts contg. nitrogenous tridentate ligands for **olefin polymn.**)

IT 9002-88-4P, Polyethylene
RL: IMF (Industrial manufacture); PREP (Preparation)
(highly active transition metal complex catalysts contg. nitrogenous tridentate ligands for **olefin polymn.**)

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

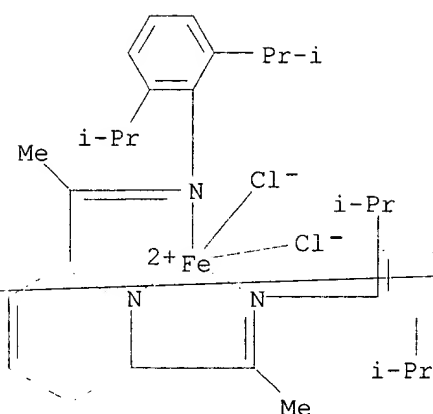
- (1) E I Du Pont de Nemours And Company; US 5955555 A HCAPLUS
- (2) E I Du Pont de Nemours And Company; EP 946609 A1 HCAPLUS
- (3) E I Du Pont de Nemours And Company; EP 951489 A1 HCAPLUS
- (4) E I Du Pont de Nemours And Company; WO 9827124 A 1998 HCAPLUS
- (5) E I Du Pont de Nemours And Company; WO 9830612 A 1998 HCAPLUS
- (6) Idemitsu Petrochem Co Ltd; JP 11269222 A HCAPLUS
- (7) Idemitsu Petrochem Co Ltd; JP 11269223 A HCAPLUS
- (8) Idemitsu Petrochem Co Ltd; JP 11269224 A HCAPLUS
- (9) Idemitsu Petrochem Co Ltd; WO 9948930 A 1999 HCAPLUS
- (10) Mitsubishi Kasei Corporation; JP 05105721 A HCAPLUS
- (11) Mitsubishi Kasei Corporation; JP 05301917 A HCAPLUS
- (12) Mitsubishi Kasei Corporation; US 5308811 A HCAPLUS
- (13) Mitsubishi Kasei Corporation; EP 698621 A1 HCAPLUS
- (14) Mitsubishi Kasei Corporation; EP 511665 A2 1992 HCAPLUS
- (15) Mitsui Chemicals Ltd; JP 20001513 A 2000

IT 204203-10-1

RL: CAT (Catalyst use); USES (Uses)
(highly active transition metal complex catalysts contg. nitrogenous tridentate ligands for **olefin polymn.**)

RN 204203-10-1 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-bis(1-methylethyl)benzenamine-.kappa.N]]-, (SP-5-13)- (9CI) (CA INDEX NAME)



- L31 ANSWER 13 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 1999:577442 HCAPLUS
 DN 131:337391
 TI Iron and Cobalt **Ethylene Polymerization** Catalysts
 Bearing 2,6-Bis(Imino)Pyridyl Ligands: Synthesis, Structures, and
 Polymerization Studies
 AU Britovsek, George J. P.; Bruce, Michael; Gibson, Vernon C.; Kimberley,
 Brian S.; Maddox, Peter J.; Mastroianni, Sergio; McTavish, Stuart J.;
 Redshaw, Carl; Solan, Gregory A.; Stroemberg, Staffan; White, Andrew J.
 P.; Williams, David J.
 CS Department of Chemistry, Imperial College, South Kensington London, SW7
 2AY, UK
 SO Journal of the American Chemical Society (1999), 121(38), 8728-8740
 CODEN: JACSAT; ISSN: 0002-7863
 PB American Chemical Society
 DT Journal
 LA English
 CC 35-3 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 75, 78
 AB The synthesis, characterization, and **ethylene polymn.**
 behavior of a series of iron and cobalt halide complexes, LMX_n (M = Fe, X
 = Cl, n = 2, 3, X = Br, n = 2; M = Co, X = Cl, n = 2), bearing chelating
 2,6-bis(imino)pyridyl ligands L [L = 2,6-(ArNCR1)2C5H3N] is reported.
 X-ray diffraction studies show the geometry at the metal centers to be
 either distorted square pyramidal or distorted trigonal bipyramidal.
 Treatment of the complexes LMX_n with methylaluminoxane (MAO) leads to
 highly active **ethylene polymn.** catalysts converting
ethylene to highly linear polyethylene (PE). LFeX₂ precatalysts
 with ketimine ligands (R1 = Me) are approx. an order of magnitude more
 active than precatalysts with aldimine ligands (R1 = H). Catalyst
 productivities in the range 3,750-20,600 g/mmole.h.cntdot.bar are
 obsd. for Fe-based ketimine catalysts, while Co ketimine systems display
 activities of 450-1740 g/mmole.h.cntdot.bar. Mol. wts. (Mw) of the
 polymers produced are in the range 14,000-611,000. Changing reaction
 conditions also affects productivity and mol. wt.; in some systems, a
 bimodal mol. wt. distribution is obsd. On the basis of evidence gathered
 to date, the lower mol. wt. fraction is a result of chain transfer to
 aluminum while the higher mol. wt. fraction is produced by a combination
 of mainly .beta.-H transfer and some chain transfer to aluminum.
 ST iron cobalt **ethylene polymn** catalyst; iminopyridyl
 contg iron cobalt polymn catalyst; polyethylene prepn iminopyridyl iron

- cobalt catalyst; methylaluminoxane **ethylene polymn**
catalyst iron cobalt
- IT Aluminoxanes
RL: CAT (Catalyst use); USES (Uses)
(Me, cocatalysts; prepn. of iron and cobalt **ethylene polymn.** catalysts bearing bis(imino)pyridyl ligands for **polymn. of ethylene**)
- IT Bond angle
Bond length
Crystal structure
Molecular structure
(of iron and cobalt catalysts bearing bis(imino)pyridyl ligands for **polymn. of ethylene**)
- IT Polymerization catalysts
(prepn. of iron and cobalt **ethylene polymn.** catalysts bearing bis(imino)pyridyl ligands for **polymn. of ethylene**)
- IT 204203-10-1P 207129-94-0P 207129-97-3P
247911-89-3P
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation);
PREP (Preparation); USES (Uses)
(catalysts; prepn. of iron and cobalt **ethylene polymn**
. catalysts bearing bis(imino)pyridyl ligands for **polymn. of ethylene**)
- IT 204203-12-3P 207129-93-9P 207129-96-2P
210155-45-6P 210768-87-9P 221391-12-4P
221391-13-5P 221391-16-8P 247911-91-7P
247911-92-8P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
USES (Uses)
(catalysts; prepn. of iron and cobalt **ethylene polymn**
. catalysts bearing bis(imino)pyridyl ligands for **polymn. of ethylene**)
- IT 204203-14-5P 204203-16-7P 204203-17-8P 210155-39-8P 210155-42-3P
219729-70-1P 221391-10-2P 221391-11-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(prepn. and characterization of bis(imino)pyridyl ligands for iron and
cobalt **polymn.** catalysts for **ethylene**)
- IT 9002-88-4P, Polyethylene
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of iron and cobalt **ethylene polymn.**
catalysts bearing bis(imino)pyridyl ligands for **polymn. of ethylene**)
- IT 7646-79-9, Cobalt dichloride, reactions 7758-94-3, Iron dichloride
7789-46-0, Iron dibromide
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with bis(imino)pyridyl ligands)
- IT 1129-30-2, 2,6-Diacetylpyridine 24544-04-5, 2,6-Diisopropylaniline
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with diisopropylaniline)
- RE.CNT 70 THERE ARE 70 CITED REFERENCES AVAILABLE FOR THIS RECORD
- RE
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 IT 204203-10-1P 207129-94-0P 207129-97-3P

247911-89-3P

RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation);

PREP (Preparation); USES (Uses)

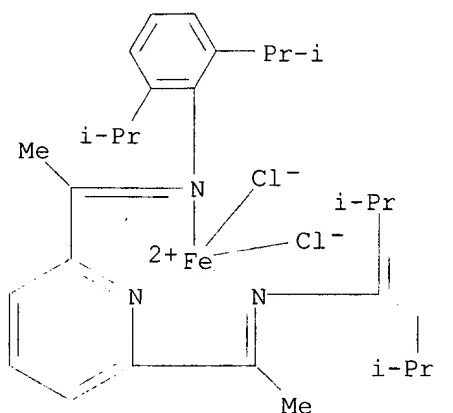
(catalysts; prepn. of iron and cobalt **ethylene polymn**

. catalysts bearing bis(imino)pyridyl ligands for

polymn. of ethylene)

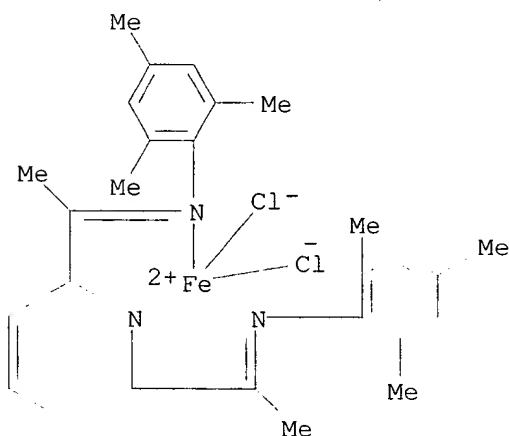
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CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-bis(1-methylethyl)benzenamine-.kappa.N]]-, (SP-5-13)- (9CI) (CA INDEX NAME)



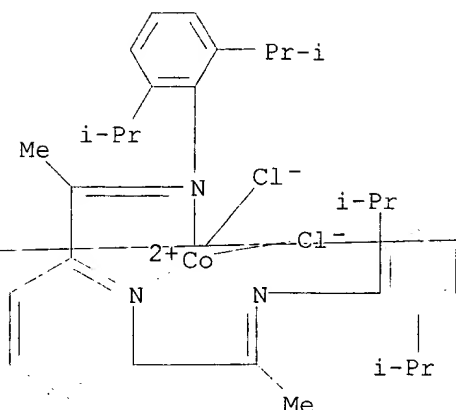
RN 207129-94-0 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,4,6-trimethylbenzenamine-.kappa.N]]-, (TB-5-22)- (9CI) (CA INDEX NAME)



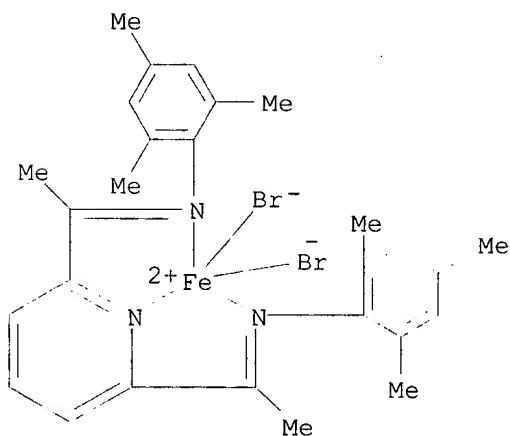
RN 207129-97-3 HCAPLUS

CN Cobalt, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-bis(1-methylethyl)benzenamine-.kappa.N]]-, (SP-5-13)- (9CI) (CA INDEX NAME)



RN 247911-89-3 HCAPLUS

CN Iron, dibromo[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,4,6-trimethylbenzenamine-.kappa.N]]-, (TB-5-22)- (9CI) (CA INDEX NAME)



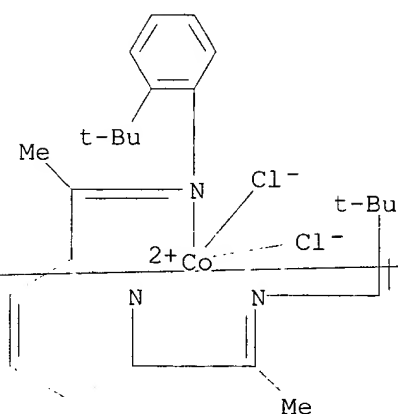
IT 204203-12-3P 207129-93-9P 207129-96-2P
210155-45-6P 210768-87-9P 221391-12-4P
221391-13-5P 221391-16-8P 247911-91-7P
247911-92-8P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
USES (Uses)

(catalysts; prepn. of iron and cobalt **ethylene polymn**
. catalysts bearing bis(imino)pyridyl **ligands** for
polymn. of ethylene)

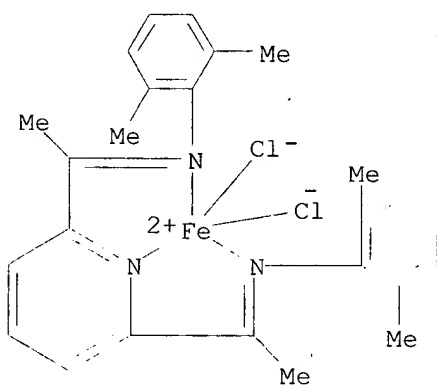
RN 204203-12-3 HCAPLUS

CN Cobalt, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2-(1,1-dimethylethyl)benzenamine]]-, (SP-5-13)- (9CI) (CA INDEX NAME)



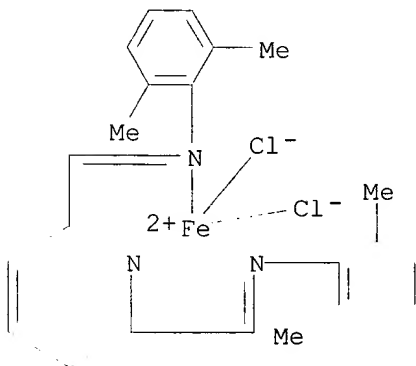
RN 207129-93-9 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-dimethylbenzenamine-.kappa.N]]-, (SP-5-13)- (9CI) (CA INDEX NAME)



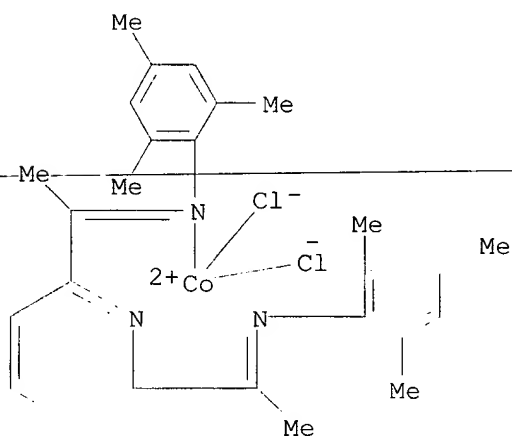
RN 207129-96-2 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)dimethylidyne]bis[2,6-dimethylbenzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



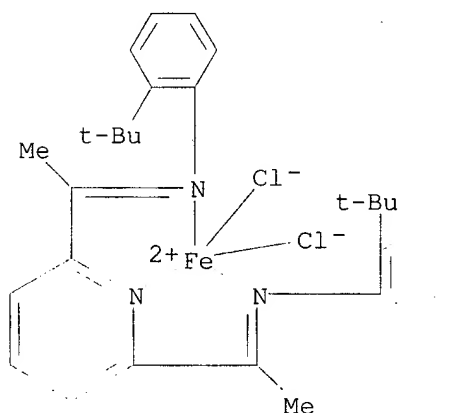
RN 210155-45-6 HCAPLUS

CN Cobalt, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,4,6-trimethylbenzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



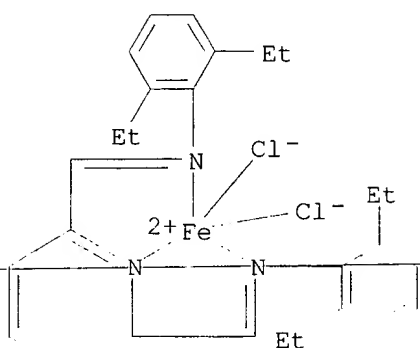
RN 210768-87-9 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2-(1,1-dimethylethyl)benzenamine-.kappa.N]]-, (SP-5-13)- (9CI) (CA INDEX NAME)



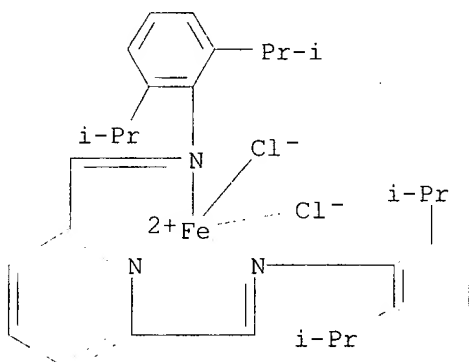
RN 221391-12-4 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)dimethylidyne]bis[2,6-diethylbenzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



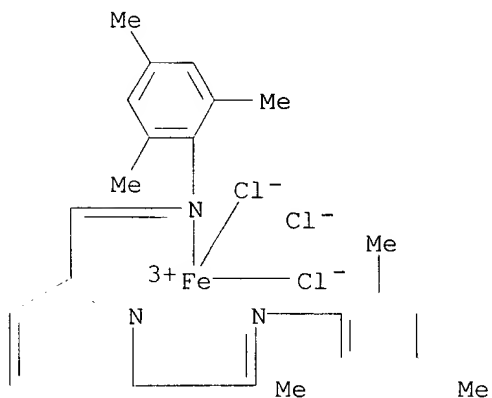
RN 221391-13-5 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)dimethylidyne]bis[2,6-bis(1-methylethyl)benzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



RN 221391-16-8 HCAPLUS

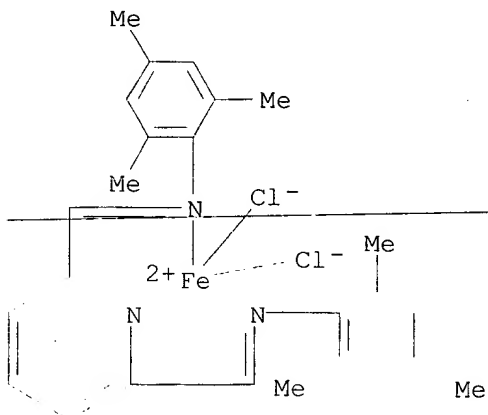
CN Iron, trichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)dimethylidyne]bis[2,4,6-trimethylbenzenamine-.kappa.N]]-, (OC-6-31)- (9CI) (CA INDEX NAME)



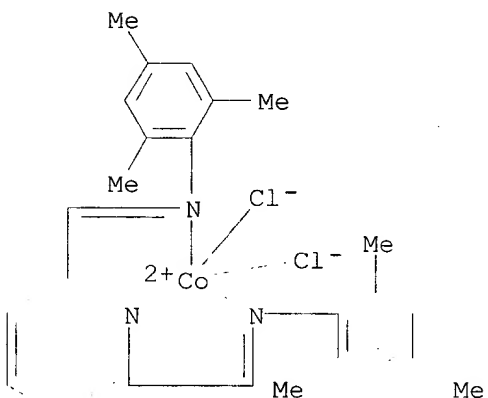
RN 247911-91-7 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)dimethylidyne]bis[2,4,6-

trimethylbenzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



RN 247911-92-8 HCAPLUS
 CN Cobalt, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)dimethyldiynyl]bis[2,4,6-trimethylbenzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



L31 ANSWER 14 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 1999:428714 HCAPLUS
 DN 131:214558
 TI Novel, highly active iron and cobalt catalysts for **olefin polymerization**
 AU Bennett, Alison M. A.
 CS Central Research and Development, E. I. DuPont de Nemours and Co. Inc., USA
 SO CHEMTECH (1999), 29(7), 24-28
 CODEN: CHTEDD; ISSN: 0009-2703
 PB American Chemical Society
 DT Journal; General Review
 LA English
 CC 35-0 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 67, 78
 AB A review, with 36 refs., on iron and cobalt complexes with bulky tridentate ligands, i.e. pyridine bis-imine ligands, activated with MAO, as

chain transfer polymn. catalysts for manuf. of linear polyethylene. Synthesis and structure of the metal complexes, effect of catalyst structure on polymer properties, and flexibility of the catalyst systems are discussed. Prospects of the catalyst systems for .alpha.-olefin prodn. are outlined.

ST review iron complex bulky tridentate ligand polymn catalyst; cobalt pyridinebisimine polymn catalyst chain walk review; chain transfer polymn catalyst bulky ligand complex review

IT Aluminoxanes

RL: CAT (Catalyst use); USES (Uses)

(Me; highly active iron and cobalt catalysts with bulky pyridinebisimine ligands for **olefin polymn.**)

IT Polymerization catalysts

(coordination; highly active iron and cobalt catalysts with bulky pyridinebisimine ligands for **olefin polymn.**)

IT Chain transfer

(highly active iron and cobalt catalysts with bulky pyridinebisimine ligands for **olefin polymn.**)

IT 204203-10-1, 2,6-Bis[1-(2,6-diisopropylphenylimino)ethyl]pyridineiron(II) chloride 207129-97-3

RL: CAT (Catalyst use); USES (Uses)

(highly active iron and cobalt catalysts with bulky pyridinebisimine ligands for **olefin polymn.**)

IT 9002-88-4P, Polyethylene

RL: IMF (Industrial manufacture); PREP (Preparation)

(highly active iron and cobalt catalysts with bulky pyridinebisimine ligands for **olefin polymn.**)

RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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- (5) Brookhart, M; J Am Chem Soc 1990, V112, P5634 HCAPLUS
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- (11) Johnson, L; J Am Chem Soc 1995, V117, P6414 HCAPLUS
- (12) Johnson, L; J Am Chem Soc 1996, V118, P267 HCAPLUS
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- (18) Lippert, F; WO 96/37523 1996 HCAPLUS
- (19) Mecking, S; J Am Chem Soc 1998, V120, P888 HCAPLUS
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- (29) Small, B; Polym Prepr Am Chem Soc Div Polym Chem 1998, V39, P213 HCAPLUS
- (30) Small, B; to be published in Macromolecules
- (31) Starzewski, K; Transition Metals and Organometallics as Catalysts for

Olefin Polymerization 1988, P349 HCAPLUS

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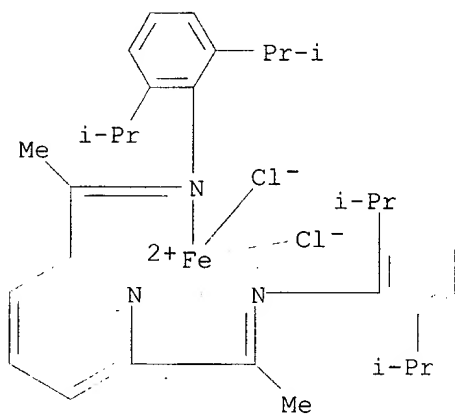
IT 204203-10-1, 2,6-Bis[1-(2,6-diisopropylphenylimino)ethyl]pyridinei
ron(II) chloride 207129-97-3

RL: CAT (Catalyst use); USES (Uses)

(highly-active-iron-and-cobalt-catalysts-with-bulky-pyridinebisimine
ligands-for-olefin-polymerization.)

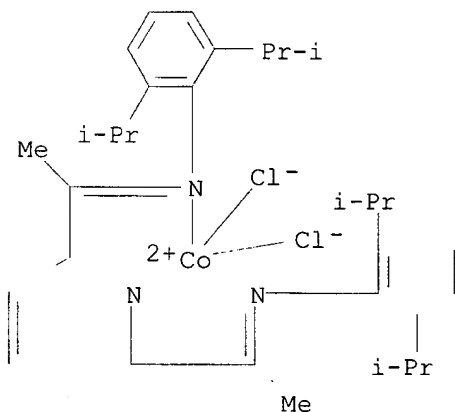
RN 204203-10-1 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-bis(1-methylethyl)benzenamine-.kappa.N]]-, (SP-5-13)- (9CI) (CA INDEX NAME)



RN 207129-97-3 HCAPLUS

CN Cobalt, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-bis(1-methylethyl)benzenamine-.kappa.N]]-, (SP-5-13)- (9CI) (CA INDEX NAME)



L31 ANSWER 15 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:384983 HCAPLUS

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DN 131:214605
 TI Oligomerization of Olefins Catalyzed by New Cationic Palladium(II)
 Complexes Containing an Unsymmetrical .alpha.-Diimine Ligand
 AU Meneghetti, Simoni Plentz; Lutz, Pierre J.; Kress, Jacky
 CS Institut Charles Sadron Laboratoire de Chimie des Metaux de Transition et
 de Catalyse Institut Le Bel, UPR 22 du CNRS UMR 7513 du CNRS Universite
 Louis Pasteur, Strasbourg, 67000, Fr.
 SO Organometallics (1999), 18(15), 2734-2737
 CODEN: ORGND7; ISSN: 0276-7333
 PB American Chemical Society
 DT Journal
 LA English
 CC 35-3 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 29, 75
 AB The palladium complexes [(Py-2-CMe:NaR)PdMe(MeCN)]+BAR'4- (2+BAR'4-) and
 [Pd(Py-2-CMe:NaR)2]2+(BAR'4-)2 [Ar = 2,6-(i-Pr)2-C6H3, Ar' =
 3,5-(CF3)2-C6H3]] have been synthesized from (Py-2-CMe:NaR)PdMeCl, and
 their crystal and mol. structure has been detd. by X-ray anal. 2+BAR'4-
 is an efficient catalyst for the oligomerization of ethylene, propylene,
 and 1-hexene, as well as for the co-oligomerization of ethylene with alkyl
 acrylates. P P P P P P P P 175273-54-8P RL: SPN (Synthetic prepn.); PREP
 (Prepn.) (prepn. of) IT 53346-06-8P 175083-61-1P 175083-62-2P 175273-51-5.
 ST oligomerization alkene catalyst palladium complex diimine; ethylene
 oligomerization catalyst palladium complex diimine; propylene
 oligomerization catalyst palladium complex diimine; hexene oligomerization
 catalyst palladium complex diimine; crystal structure palladium complex
 acetyldiisopropylphenylimine catalyst
 IT Bond angle
 Bond length
 Crystal structure
 (of catalysts; oligomerization of olefins catalyzed by cationic
 palladium(II) complexes contg. unsym. (acetyldiisopropylphenylimine)pyr
 idine ligand)
 IT Molecular structure
 (of catalysts; oligomerization of olefins catalyzed by cationic
 palladium(II) complexes contg. unsym. (acetyldiisopropylphenylimine)pyr
 idine ligand)
 IT **Polymerization** catalysts
 (oligomerization; oligomerization of **olefins** catalyzed by
 cationic palladium(II) complexes contg. unsym.
 (acetyldiisopropylphenylimine)pyridine ligand)
 IT 63936-85-6 79060-88-1 219325-26-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (in catalyst prepn.; oligomerization of olefins catalyzed by cationic
 palladium(II) complexes contg. unsym. (acetyldiisopropylphenylimine)pyr
 idine ligand)
 IT **242489-75-4P 242489-77-6P**
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (in catalyst prepn.; oligomerization of olefins catalyzed by cationic
 palladium(II) complexes contg. unsym. (acetyldiisopropylphenylimine)pyr
 idine **ligand**)
 IT 9002-88-4P, Ethylene homopolymer 9003-07-0P 25067-06-5P, 1-Hexene
 homopolymer 25101-13-7P, Ethylene-methyl methacrylate copolymer
 104468-97-5P, Benzyl methacrylate-ethylene copolymer
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (oligomeric; oligomerization of olefins catalyzed by cationic
 palladium(II) complexes contg. unsym. (acetyldiisopropylphenylimine)pyr
 idine ligand)
 IT **242791-16-8**

RL: CAT (Catalyst use); USES (Uses)
(oligomerization of olefins catalyzed by cationic palladium(II)
complexes contg. unsym. (acetyldiisopropylphenylimine)pyridine
ligand)

IT 242489-79-8P

RL: SPN (Synthetic preparation); PREP (Preparation)
(oligomerization of olefins catalyzed by cationic palladium(II)
complexes contg. unsym. (acetyldiisopropylphenylimine)pyridine ligand)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

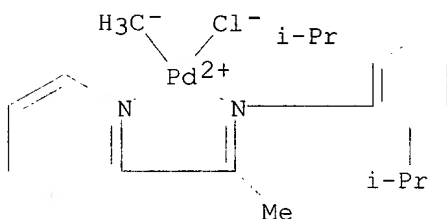
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- (6) Feldman, J; Organometallics 1997, V16, P1514 HCAPLUS
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- (8) Mecking, S; J Am Chem Soc 1998, V120, P888 HCAPLUS
- (9) Rix, F; J Am Chem Soc 1995, V117, P1137 HCAPLUS
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- (11) Rulke, R; J Organomet Chem 1996, V508, P109

IT 242489-75-4P 242489-77-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(in catalyst prepn.; oligomerization of olefins catalyzed by cationic
palladium(II) complexes contg. unsym. (acetyldiisopropylphenylimine)pyr
idine ligand)

RN 242489-75-4 HCAPLUS

CN Palladium, [2,6-bis(1-methylethyl)-N-[1-(2-pyridinyl-
.kappa.N)ethylidene]benzenamine-.kappa.N]chloromethyl-, (SP-4-3)- (9CI)
(CA INDEX NAME)

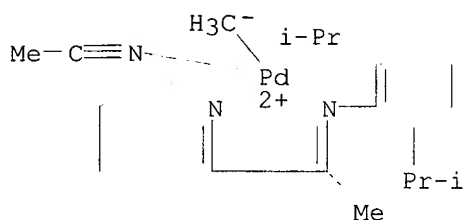


RN 242489-77-6 HCAPLUS

CN Palladium(1+), (acetonitrile)[2,6-bis(1-methylethyl)-N-[1-(2-pyridinyl-
.kappa.N)ethylidene]benzenamine-.kappa.N]methyl-, (SP-4-3)-,
tetrakis[3,5-bis(trifluoromethyl)phenyl]borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 242489-76-5
CMF C22 H30 N3 Pd
CCI CCS
CDES 7:SP-4-3

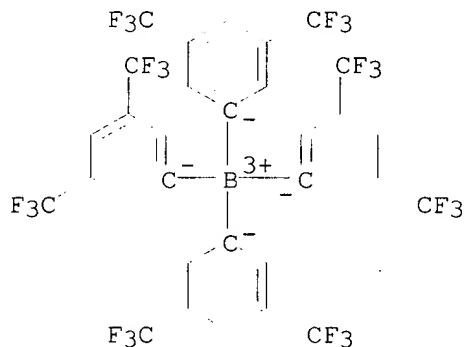


CM 2

CRN 79230-20-9

CMF C32 H12 B F24

CCI CCS



IT 242791-16-8

RL: CAT (Catalyst use); USES (Uses)

(oligomerization of olefins catalyzed by cationic palladium(II)
complexes contg. unsym. (acetyldiisopropylphenylimine)pyridine
ligand)

RN 242791-16-8 HCAPLUS

CN Palladium(1+), (acetonitrile)[2,6-bis(1-methylethyl)-N-[1-(2-pyridinyl-
.kappa.N)ethylidene]benzenamine-.kappa.N]methyl-, (SP-4-2)-,
tetrakis[3,5-bis(trifluoromethyl)phenyl]borate(1-) (9CI) (CA INDEX NAME)

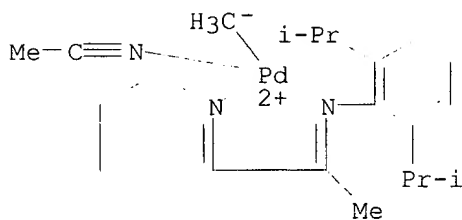
CM 1

CRN 242791-15-7

CMF C22 H30 N3 Pd

CCI CCS

CDES 7:SP-4-2

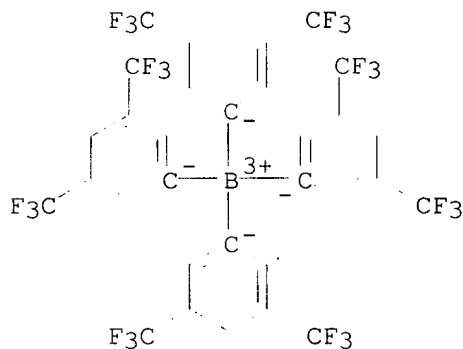


CM 2

CRN 79230-20-9

CMF C32 H12 B F24

CCI CCS



L31 ANSWER 16 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 1998:723809 HCAPLUS

DN 130:4185

TI Metal complexes having nitrogen-containing ligands as **olefin polymerization** catalysts

IN Bres, Philippe-Luc; Gibson, Vernon Charles; Mabile, Christine Daniele Florence; Reed, Warren; Wass, Duncan; Weatherhead, Richard Henry

PA BP Chemicals Ltd., UK

SO PCT Int. Appl., 25 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C08F010-00

ICS C08F004-70; C08F004-80; C07F015-00; C07F015-04

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 29

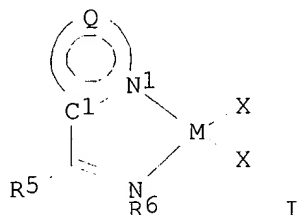
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9849208	A1	19981105	WO 1998-GB1205	19980424
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

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RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,
FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,
CM, GA, GN, ML, MR, NE, SN, TD, TG

AU 9870693 A1 19981124 AU 1998-70693 19980424
PRAI GB 1997-8487 19970425
WO 1998-GB1205 19980424
OS MARPAT 130:4185
GI



- AB A nitrogen-contg. metal complex compd. I wherein the ring formed by Q, C1, and N1 is aromatically unsatd., the divalent group Q comprises a chain of 3-4 atoms having the formula (CR)_n(Z)_r [n = 2, 3, 4; r = 0, 1; (n + r) = 3, 4; Z = N, O, S; R = H, halogen, C1-30 hydrocarbyl, NR42, OR5, NO2; R4, R5 = C1-30 hydrocarbyl], R1 is H, halogen, or C1-30 hydrocarbyl or halohydrocarbyl, R2 is H, halogen, or C1-30 hydrocarbyl, M is nickel or palladium, X is a univalent radical, for example, halide, hydride, hydrocarbyl oxide. Q is preferably a pyridine ring. Also described is a catalyst for the **polymn.** of 1-olefins comprising the defined metal complex and an activating quantity of a compd. selected from organoaluminium compds., aluminoxanes and fluorohydrocarbylboron compds.
- ST **polymn olefin** catalyst metal complex; palladium complex nitrogen ligand polymn catalyst; nickel complex nitrogen ligand polymn catalyst
- IT Aluminoxanes
RL: CAT (Catalyst use); USES (Uses)
(Me; metal complexes having nitrogen-contg. ligands as **olefin polymn.** catalysts)
- IT Polymerization
(gas-phase; metal complexes having nitrogen-contg. ligands as **olefin polymn.** catalysts)
- IT Polymerization catalysts
(metal complexes having nitrogen-contg. ligands as **olefin polymn.** catalysts)
- IT Polymerization
(slurry; metal complexes having nitrogen-contg. ligands as **olefin polymn.** catalysts)
- IT Polymerization
(soln.; metal complexes having nitrogen-contg. ligands as **olefin polymn.** catalysts)
- IT 1314-23-4, Zirconia, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 79060-88-1 139362-04-2
RL: CAT (Catalyst use); USES (Uses)
(metal complexes having nitrogen-contg. ligands as **olefin polymn.** catalysts)
- IT 215594-94-8P 215594-96-0P 215594-97-1P
215594-99-3P 215595-01-0P 215595-03-2P

215595-05-4P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
USES (Uses)

(metal complexes having nitrogen-contg. ligands as
olefin polymn. catalysts)

IT 9002-88-4P

RL: IMF (Industrial manufacture); PREP (Preparation)
(metal complexes having nitrogen-contg. ligands as **olefin
polymn. catalysts**)

IT 5780-66-5, Pyrazinecarboxaldehyde 24544-04-5, 2,6-Diisopropylaniline
~~28923-39-9 63936-85-6 149810-35-5 215459-01-1~~

RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of metal complexes having nitrogen-contg. ligands as
olefin polymn. catalysts)

IT 215459-03-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(prepn. of metal complexes having nitrogen-contg. ligands as
olefin polymn. catalysts)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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HCAPLUS
- (5) Rulke, R; JOURNAL OF ORGANOMETALLIC CHEMISTRY 1996, V508(1), P109

IT 215594-94-8P 215594-96-0P 215594-97-1P

215594-99-3P 215595-01-0P 215595-03-2P

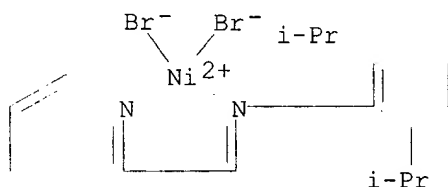
215595-05-4P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
USES (Uses)

(metal complexes having nitrogen-contg. ligands as
olefin polymn. catalysts)

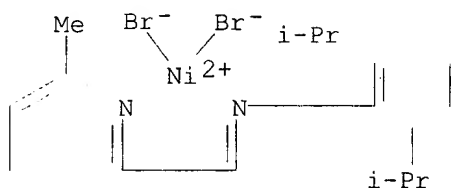
RN 215594-94-8 HCAPLUS

CN Nickel, [2,6-bis(1-methylethyl)-N-[(2-pyridinyl-
.kappa.N)methylene]benzenamine-.kappa.N]dibromo- (9CI) (CA INDEX NAME)



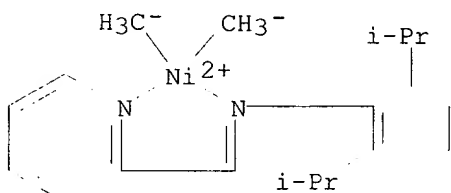
RN 215594-96-0 HCAPLUS

CN Nickel, [2,6-bis(1-methylethyl)-N-[(6-methyl-2-pyridinyl-
.kappa.N)methylene]benzenamine-.kappa.N]dibromo- (9CI) (CA INDEX NAME)



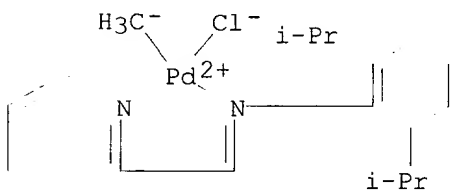
RN 215594-97-1 HCAPLUS

CN Nickel, [2,6-bis(1-methylethyl)-N-[(2-pyridinyl-.kappa.N)methylene]benzenamine-.kappa.N]dimethyl- (9CI) (CA INDEX NAME)



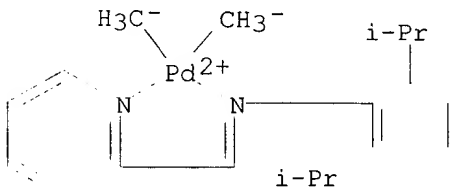
RN 215594-99-3 HCAPLUS

CN Palladium, [2,6-bis(1-methylethyl)-N-[(2-pyridinyl-.kappa.N)methylene]benzenamine-.kappa.N]chloromethyl- (9CI) (CA INDEX NAME)



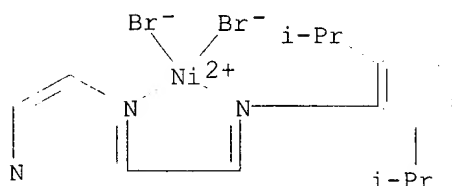
RN 215595-01-0 HCAPLUS

CN Palladium, [2,6-bis(1-methylethyl)-N-[(2-pyridinyl-.kappa.N)methylene]benzenamine-.kappa.N]dimethyl- (9CI) (CA INDEX NAME)

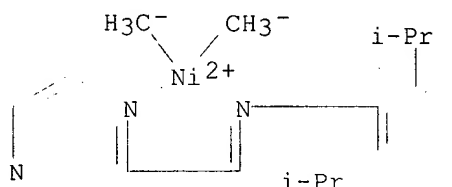


RN 215595-03-2 HCAPLUS

CN Nickel, [2,6-bis(1-methylethyl)-N-[(pyrazinyl-.kappa.N1)methylene]benzenamine-.kappa.N]dibromo- (9CI) (CA INDEX NAME)



RN 215595-05-4 HCAPLUS
 CN Nickel, [2,6-bis(1-methylethyl)-N-[(pyrazinyl-.kappa.N1)methylene]benzenamine-.kappa.N]dimethyl- (9CI) (CA INDEX NAME)



L31 ANSWER 17 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 1998:270894 HCAPLUS
 DN 128:321993
 TI Novel **olefin polymerization** catalysts based on iron and cobalt
 AU Birtovsek, George J. P.; Gibson, Vernon; Kimberley, Brian S.; Maddox, Peter J.; McTavish, Stuart J.; Solan, Gregory A.; White, Andrew J. P.; Williams, David J.
 CS Dep. Chem., Imperial Coll., Kensington, London, SW7 2AY, UK
 SO Chemical Communications (Cambridge) (1998), (7), 849-850
 CODEN: CHCOFS; ISSN: 1359-7345
 PB Royal Society of Chemistry
 DT Journal
 LA English
 CC 35-3 (Chemistry of Synthetic High Polymers)
 AB Catalysts derived from iron and cobalt complexes bearing 2,6-bis(imino)pyridyl ligands for **polymn. of ethylene** were studied. All of the catalysts produced essentially linear polyethylene with mol. wts. that were dependent upon the aryl substitution pattern. There was a marked dependence of the polymer mol. wt. on ethylene pressure for the iron catalyst system. The cobalt catalyst displayed a considerably lower activity than its iron analog.
 ST iron iminopyridyl **polymn** catalyst **ethylene**; cobalt iminopyridyl **polymn** catalyst **ethylene**; polyethylene prepn catalyst iron cobalt
 IT Polymerization catalysts
 (iron and cobalt complexes contg. bis(imino)pyridyl ligands as catalysts for **polymn. of ethylene**)
 IT 204203-10-1 207129-93-9 207129-94-0
 207129-95-1 207129-96-2 207129-97-3
 RL: CAT (Catalyst use); USES (Uses)
 (iron and cobalt complexes contg. bis(imino)pyridyl ligands as catalysts for **polymn. of ethylene**)
 IT 9002-88-4P, Polyethylene
 RL: SPN (Synthetic preparation); PREP (Preparation)

(iron and cobalt complexes contg. bis(imino)pyridyl ligands as catalysts for polymn. of ethylene)

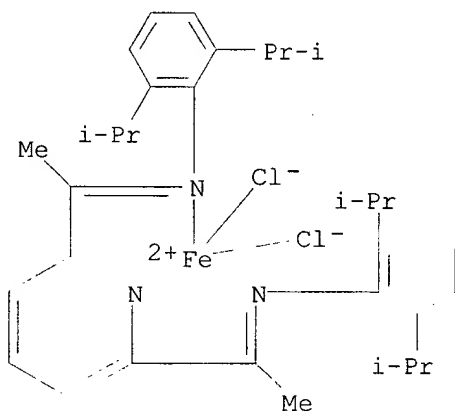
IT 204203-10-1 207129-93-9 207129-94-0
207129-95-1 207129-96-2 207129-97-3

RL: CAT (Catalyst use); USES (Uses)

(iron and cobalt complexes contg. bis(imino)pyridyl ligands as catalysts for polymn. of ethylene)

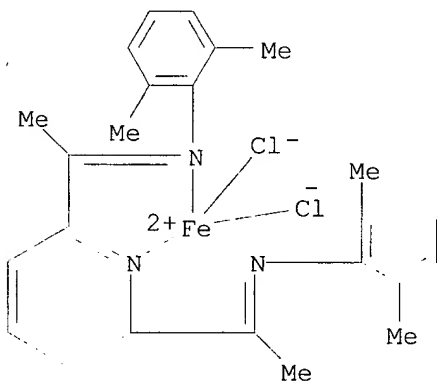
RN 204203-10-1 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-bis(1-methylethyl)benzenamine-.kappa.N]]-, (SP-5-13)- (9CI) (CA INDEX NAME)



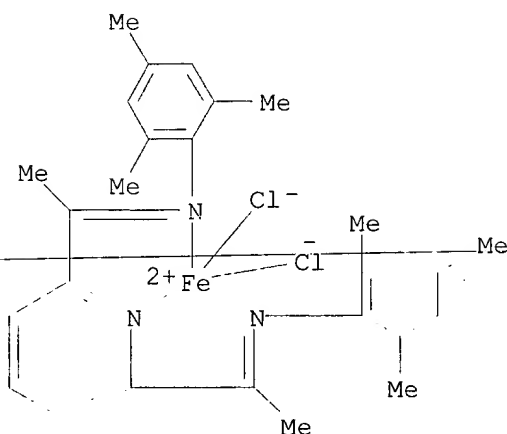
RN 207129-93-9 HCAPLUS

CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-dimethylbenzenamine-.kappa.N]]-, (SP-5-13)- (9CI) (CA INDEX NAME)

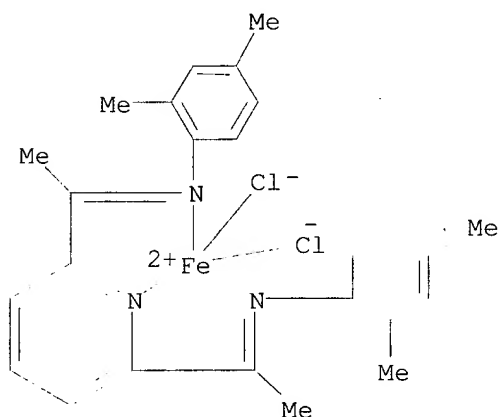


RN 207129-94-0 HCAPLUS

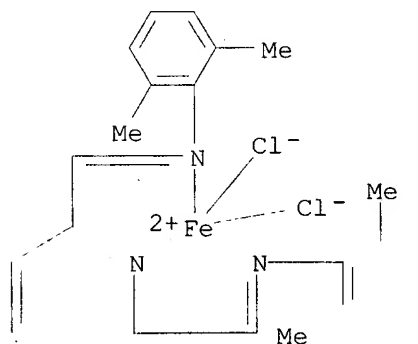
CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,4,6-trimethylbenzenamine-.kappa.N]]-, (TB-5-22)- (9CI) (CA INDEX NAME)



RN 207129-95-1 HCAPLUS
 CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,4-dimethylbenzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



RN 207129-96-2 HCAPLUS
 CN Iron, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)dimethylidyne]bis[2,6-dimethylbenzenamine-.kappa.N]]- (9CI) (CA INDEX NAME)



RN 207129-97-3 HCAPLUS
 CN Cobalt, dichloro[N,N'-[(2,6-pyridinediyl-.kappa.N)diethylidyne]bis[2,6-bis(1-methylethyl)benzenamine-.kappa.N]]-, (SP-5-13)- (9CI) (CA INDEX NAME)

